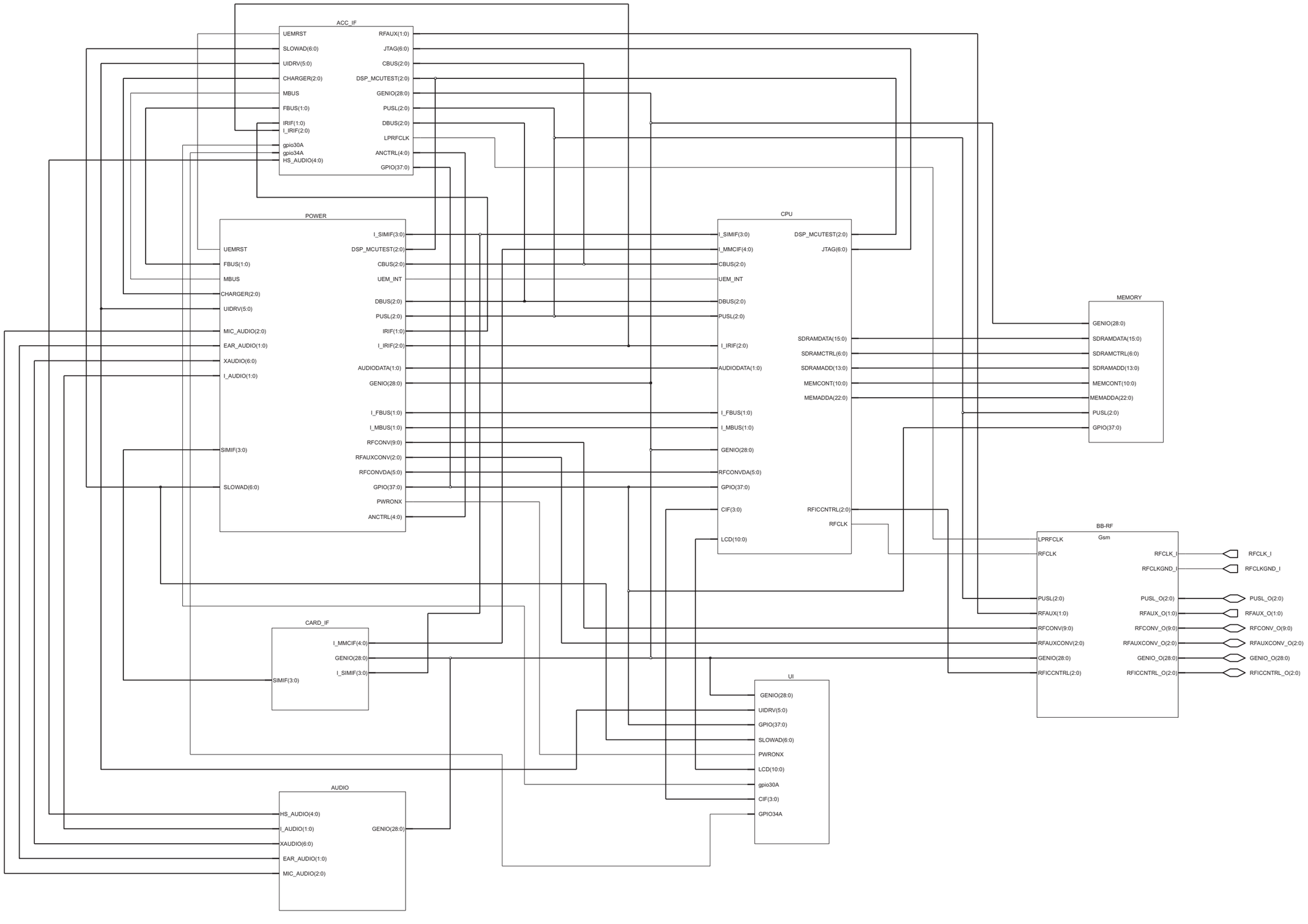
## Schematics (NH4_051)

## DCT-4 Common Baseband





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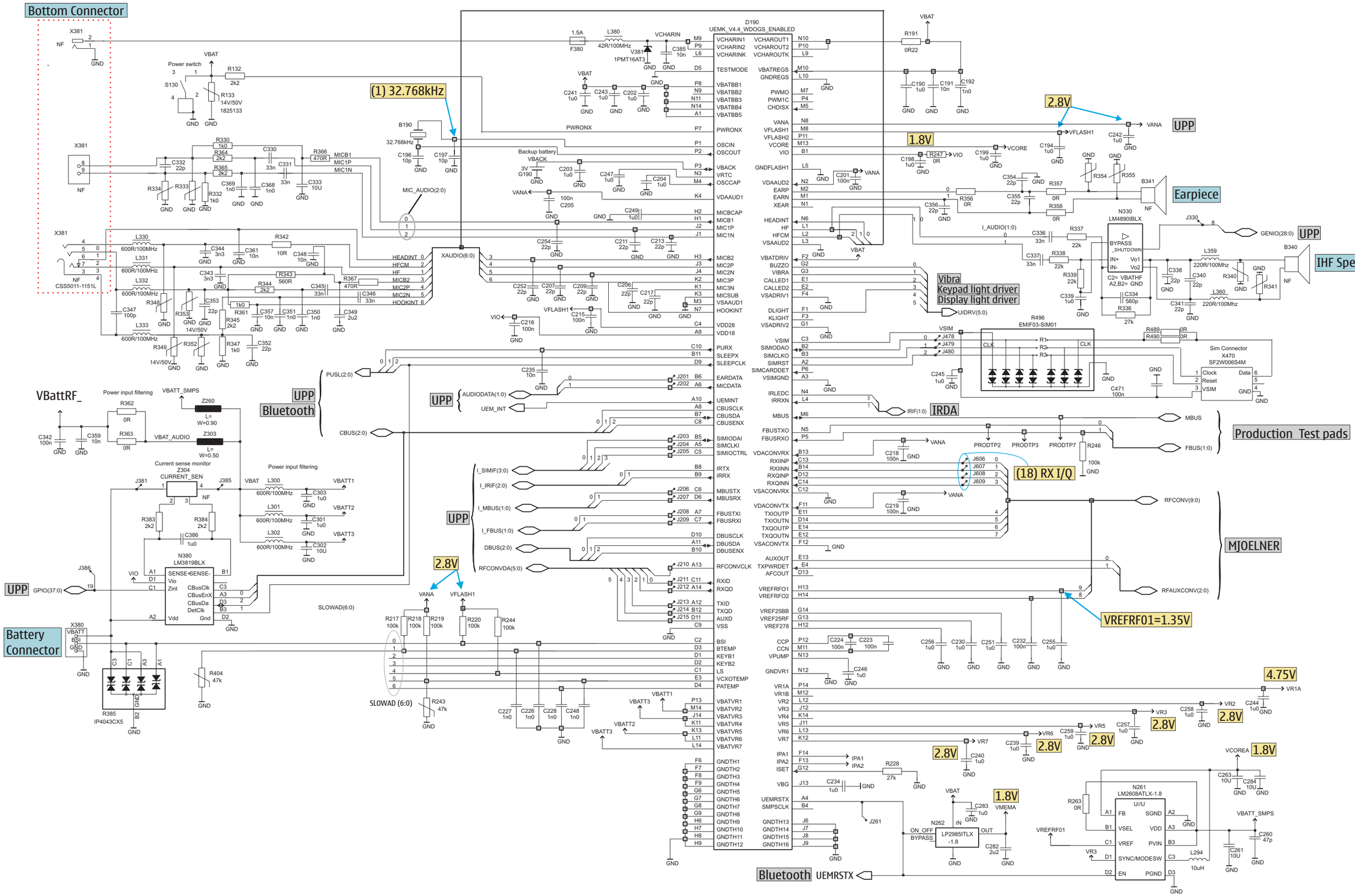
## UEM, Bottom connector, SIM





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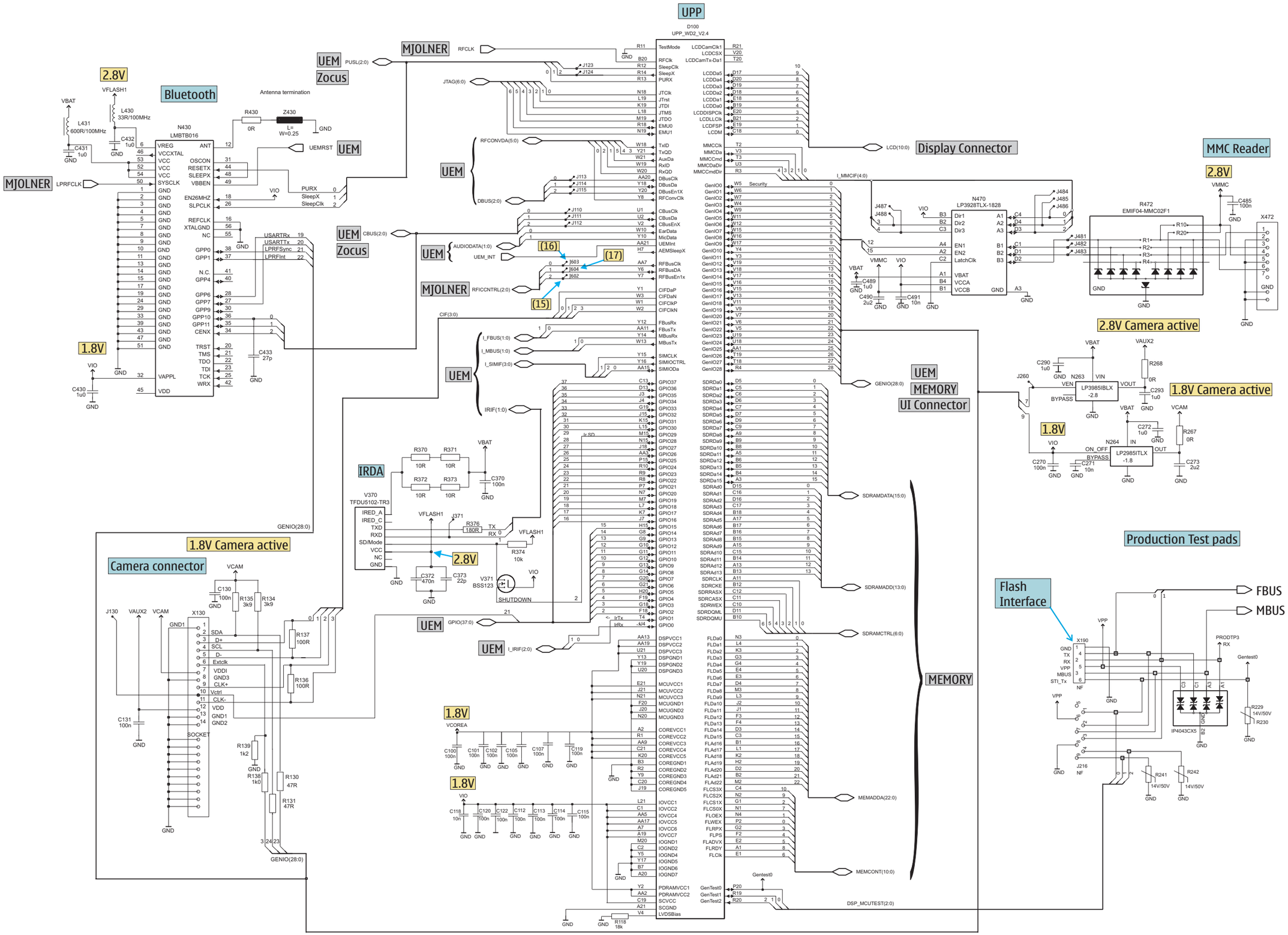
## UPP, Flash, Bluethooth, Irda, Camera





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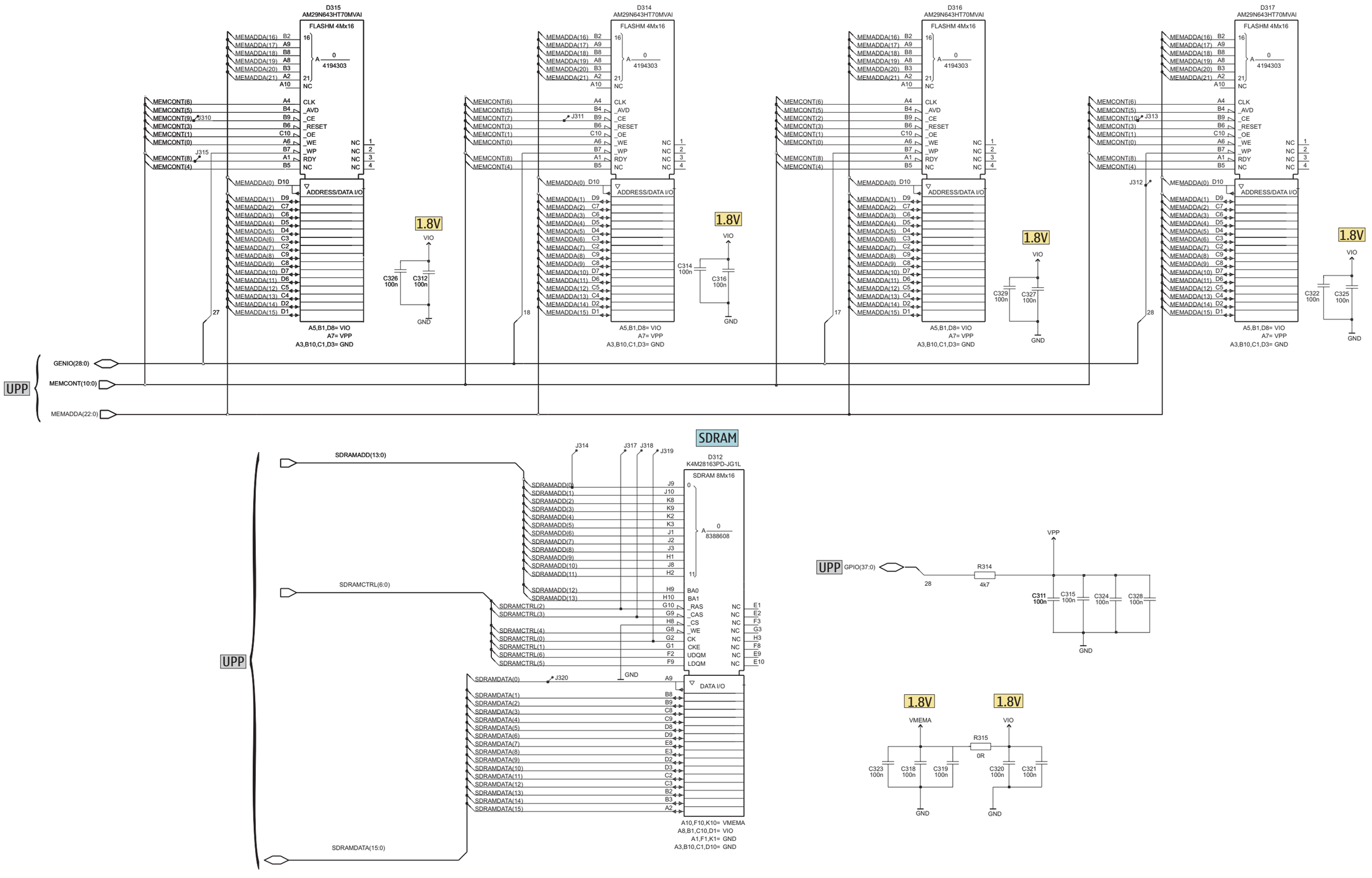
## FLASH, SDRAM





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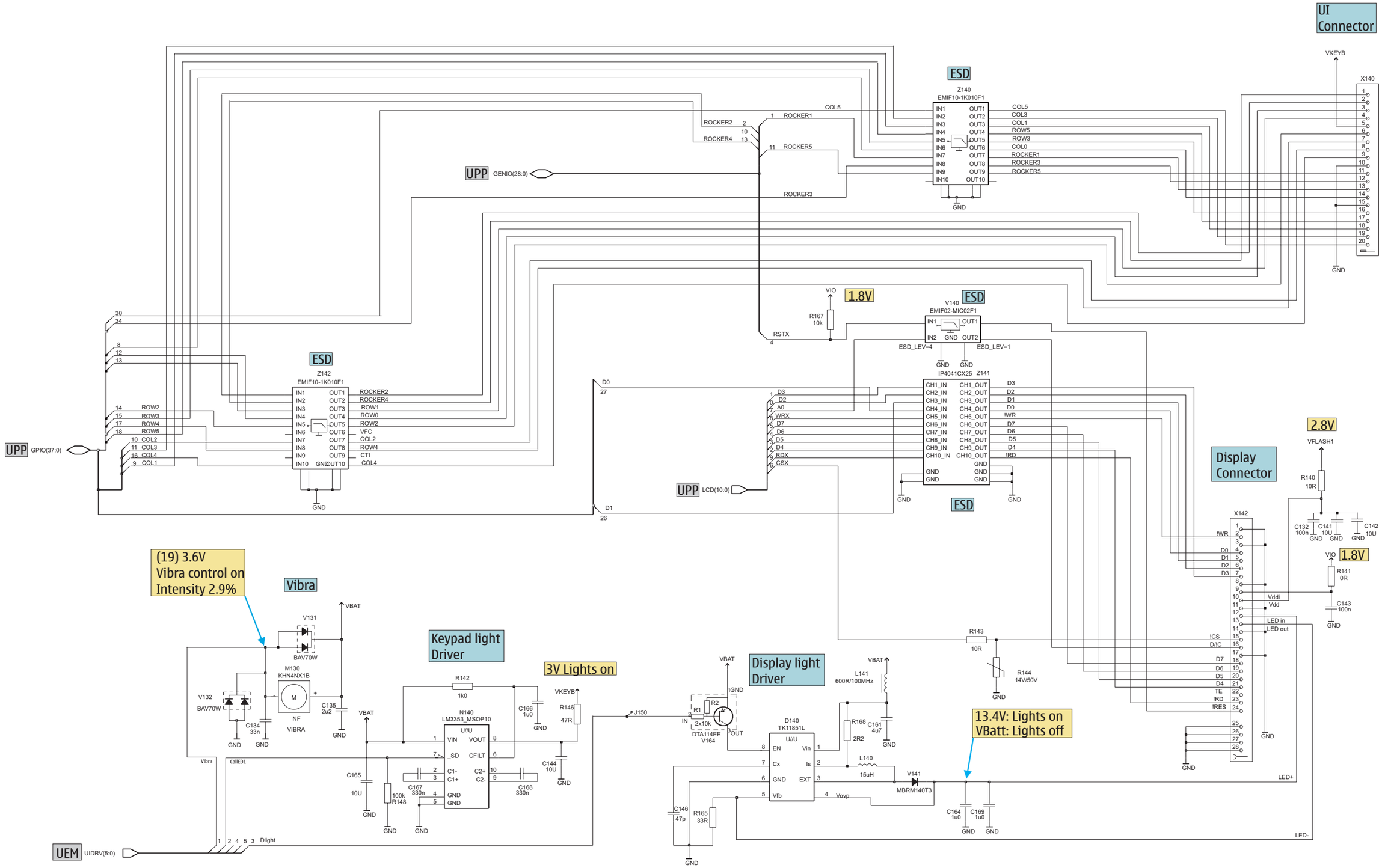
## UI, Dispaly connector, Vibra, Light driver, ESD





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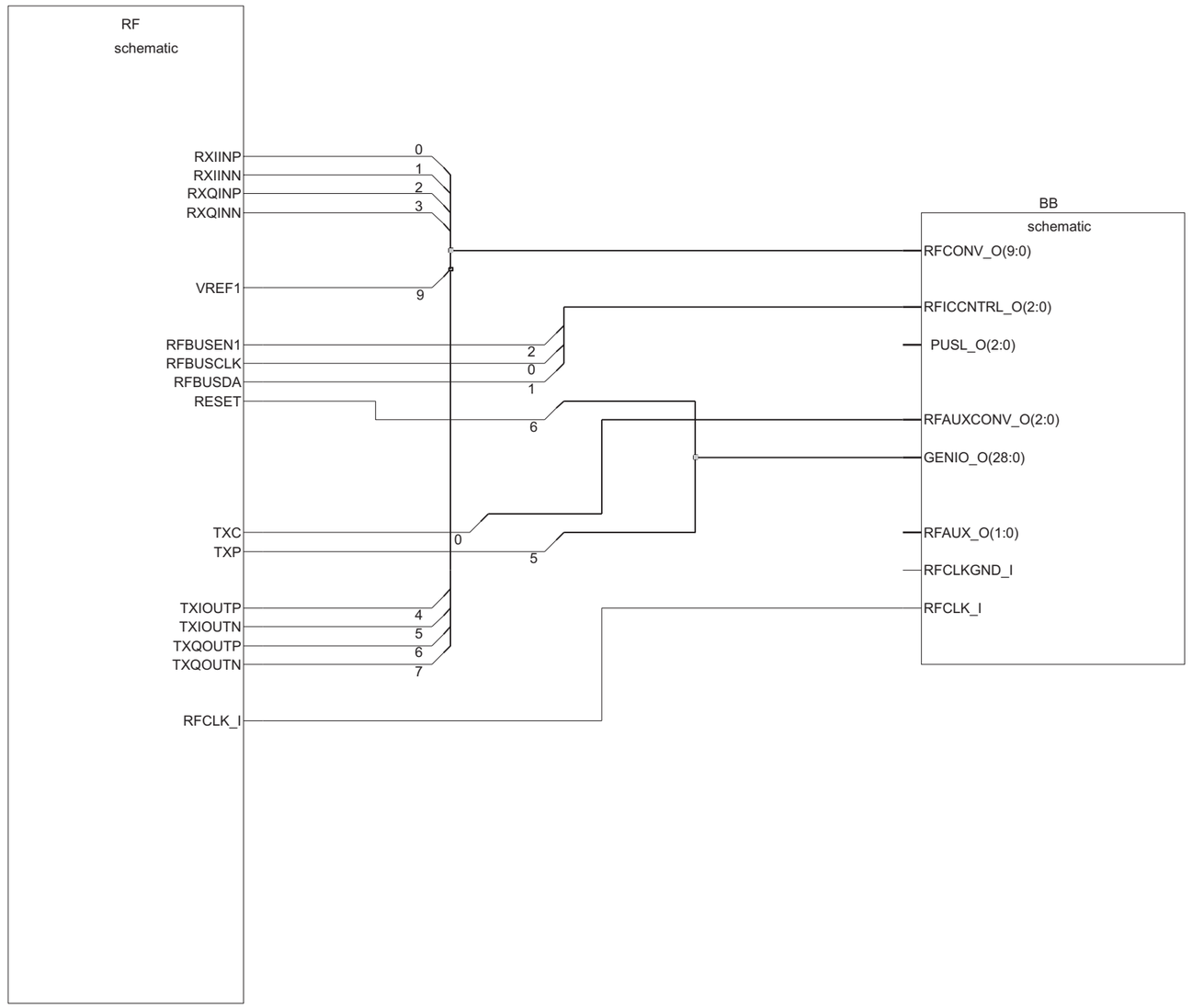
## BB-RF Connections Overview





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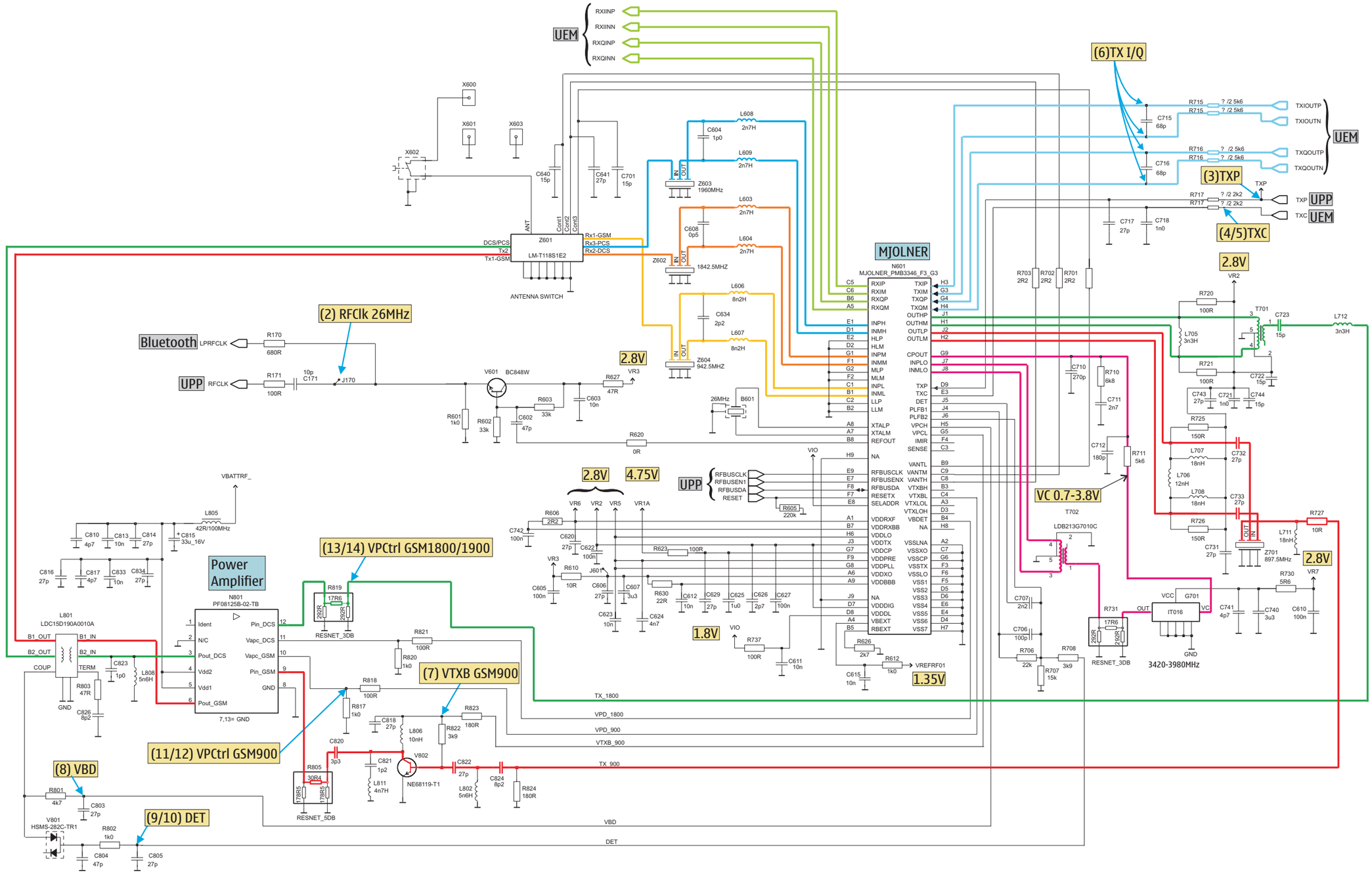
## RF GSM

| Band | Channel | RX | VC/RX | VCO/RX | TX | VCO/TX | VC/TX |
|---|---|---|---|---|---|---|---|
| GSM 900 | 37 | 942,4MHz | ~2,58V | 3769,6MHz | 897,4MHz | 3589,6MHz | ~1,8V |
| GSM 1800 | 700 | 1842,8MHz | ~2,2V | 3685,6MHz | 1747,8Mhz | 3495,6MHz | ~1,4V |
| GSM 1900 | 661 | 1960MHz | ~3,2V | 3920MHz | 1880MHz | 3760MHz | ~2,54V |





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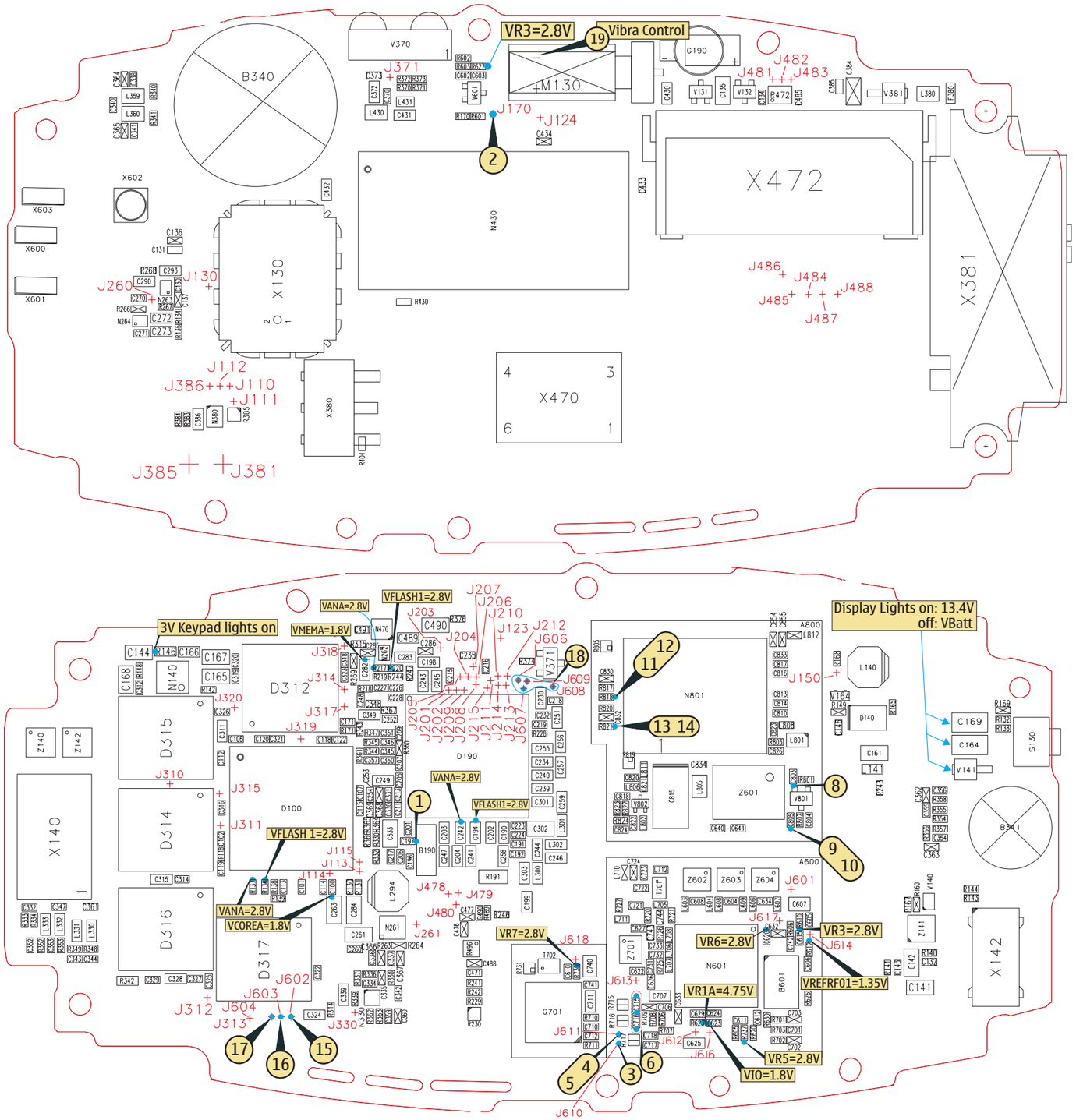
## Signal Overview

| | |
|---|---|
| 1) SLEEPCLK 32.768kHz 900mVpp at C197 | 10) DET at Power level 19 |
| 2) RFCLK 26MHz 1Vpp at J170 | 11) VPCTRL GSM 900 Power level 5 at R818 |
| 3) TXP at J610 | 12) VPCTRL GSM 900 Power level 19 at R818 |
| 4) TXC 900 P. level 5 / 1800/1900 P. level 0 at J611 | 13) VPCTRL GSM 1800/1900 Powerlevel 15 at R821 |
| 5) TXC 900 P. level 19 / 1800/1900 P. level 15 at J611 | 14) VPCTRL GSM 1800/1900 Powerlevel 0 at R821 |
| 6) TX IQ at C715/C716 | 15)RFBusEna1 at J602 |
| 7) VTX_B at R822/823 | 16) RFBusCLK at J603 |
| 8) VBD at C803 | 17) RFBusData at J604 |
| 9) DET_5 at C805 at Power level 5 | 18) RX IQ at J606-609 |
| | 19) Vibra Control Intensity 2.9% at Vibra pad (-) |





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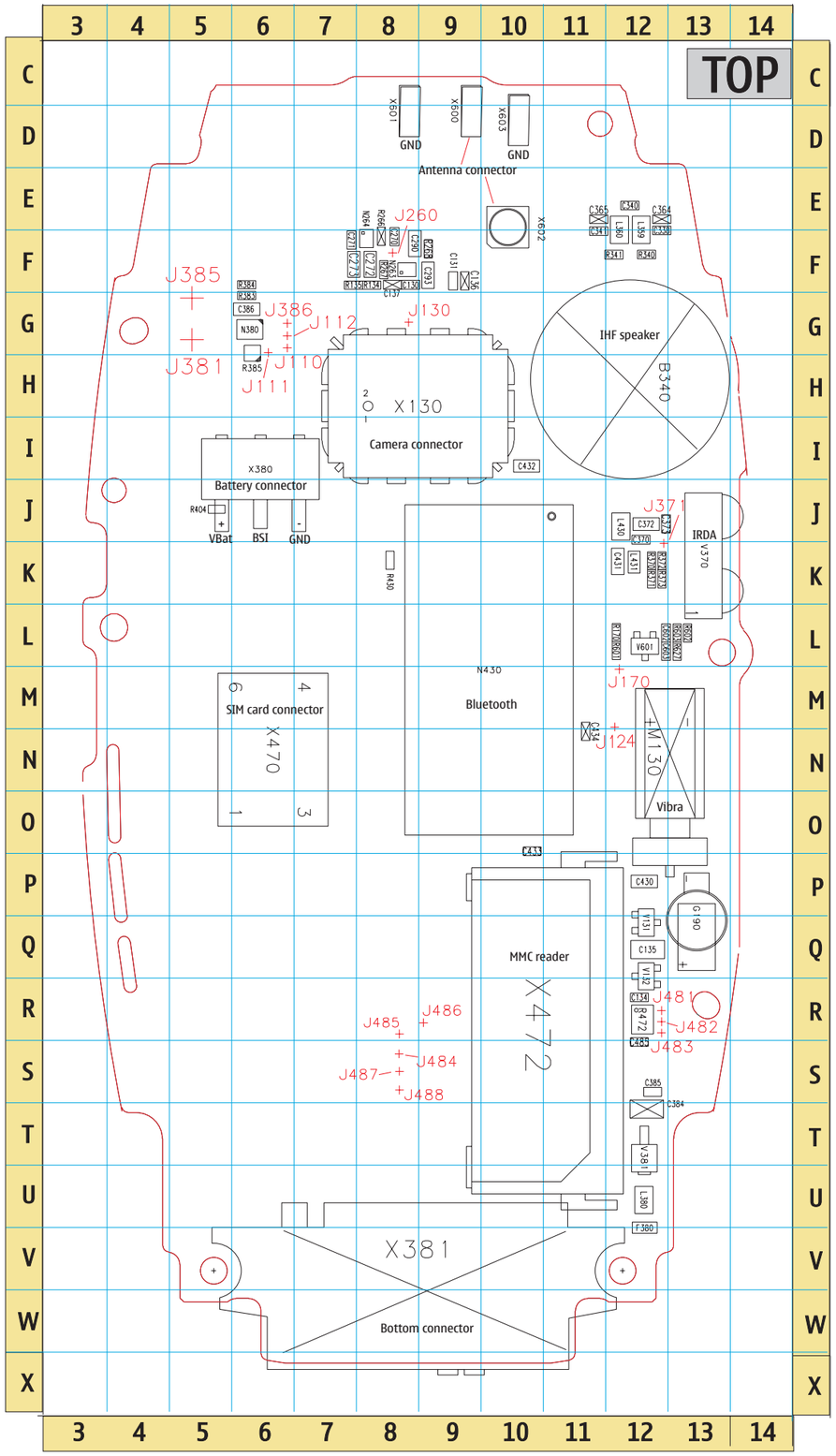
## Component finder




| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | | | C272 | F | 8 | C701 | H | 5 | J381 | G | 5 | R148 | U | 12 | R720 | K | 7 |
| A600 | K | 6 | C273 | F | 7 | C706 | K | 5 | J385 | G | 5 | R165 | F | 11 | R721 | K | 7 |
| A800 | J | 11 | C282 | Q | 12 | C707 | K | 5 | J386 | G | 6 | R167 | F | 7 | R725 | K | 6 |
| B | | | C283 | P | 12 | C710 | L | 5 | J478 | O | 7 | R168 | G | 12 | R726 | K | 7 |
| B190 | O | 8 | C284 | Q | 7 | C711 | L | 5 | J479 | O | 7 | R170 | L | 12 | R727 | L | 7 |
| B601 | H | 6 | C290 | F | 8 | C712 | L | 5 | J480 | O | 7 | R171 | Q | 11 | R730 | L | 6 |
| C | | | C293 | F | 9 | C715 | K | 5 | J481 | R | 12 | R191 | N | 8 | R731 | M | 6 |
| C100 | Q | 8 | C301 | M | 9 | C716 | K | 5 | J482 | R | 12 | R217 | P | 12 | R737 | L | 5 |
| C101 | R | 8 | C302 | M | 9 | C717 | K | 4 | J483 | R | 12 | R218 | Q | 11 | R801 | H | 10 |
| C102 | S | 8 | C303 | N | 8 | C718 | K | 5 | J484 | S | 8 | R219 | P | 12 | R802 | H | 9 |
| C105 | S | 10 | C311 | S | 11 | C721 | K | 7 | J485 | R | 8 | R220 | P | 12 | R803 | I | 10 |
| C107 | Q | 9 | C312 | U | 11 | C722 | K | 8 | J486 | R | 9 | R228 | M | 11 | R805 | L | 12 |
| C112 | S | 10 | C314 | T | 8 | C723 | K | 8 | J487 | S | 8 | R229 | N | 5 | R817 | L | 11 |
| C113 | R | 8 | C315 | U | 8 | C731 | K | 6 | J488 | S | 8 | R230 | N | 5 | R818 | L | 11 |
| C114 | Q | 8 | C316 | S | 9 | C732 | K | 6 | J601 | H | 7 | R241 | N | 6 | R819 | K | 10 |
| C115 | Q | 9 | C318 | Q | 12 | C733 | K | 6 | J602 | R | 5 | R242 | N | 5 | R820 | L | 11 |
| C118 | Q | 10 | C319 | S | 12 | C740 | L | 6 | J603 | R | 5 | R243 | G | 9 | R821 | L | 11 |
| C119 | S | 8 | C320 | S | 12 | C741 | L | 6 | J604 | R | 5 | R244 | P | 12 | R822 | L | 9 |
| C120 | S | 10 | C321 | R | 10 | C742 | H | 6 | J606 | N | 12 | R246 | N | 7 | R823 | L | 9 |
| C122 | Q | 10 | C322 | R | 6 | C743 | K | 7 | J607 | N | 11 | R247 | P | 12 | R824 | L | 9 |
| C130 | F | 8 | C323 | Q | 12 | C744 | K | 7 | J608 | M | 11 | R263 | P | 6 | S | | |
| C131 | F | 9 | C324 | R | 5 | C803 | H | 10 | J609 | M | 12 | R267 | F | 8 | S130 | D | 10 |
| C132 | F | 6 | C325 | T | 6 | C804 | H | 9 | J610 | L | 4 | R268 | F | 9 | T | | |
| C134 | R | 12 | C326 | S | 11 | C805 | H | 9 | J611 | L | 5 | R314 | Q | 5 | T701 | K | 8 |
| C135 | Q | 12 | C327 | T | 6 | C810 | H | 11 | J612 | J | 5 | R315 | Q | 12 | T702 | M | 6 |
| C141 | F | 6 | C328 | T | 6 | C813 | H | 11 | J613 | K | 6 | R330 | P | 8 | V | | |
| C142 | F | 6 | C329 | U | 6 | C814 | H | 11 | J614 | H | 7 | R332 | P | 8 | V131 | Q | 12 |
| C143 | F | 6 | C330 | P | 9 | C815 | K | 9 | J616 | J | 5 | R333 | W | 7 | V132 | Q | 12 |
| C144 | U | 12 | C331 | P | 9 | C816 | H | 12 | J617 | I | 7 | R334 | W | 7 | V140 | F | 7 |
| C146 | G | 11 | C332 | W | 7 | C817 | H | 12 | J618 | | | R336 | Q | 6 | V141 | E | 10 |
| C161 | G | 10 | C333 | P | 9 | C818 | L | 9 | L | | | R337 | Q | 6 | V164 | G | 11 |
| C164 | E | 10 | C334 | Q | 6 | C820 | K | 10 | L140 | G | 12 | R338 | P | 6 | V370 | K | 13 |
| C165 | T | 12 | C336 | P | 6 | C821 | K | 10 | L141 | G | 10 | R339 | Q | 5 | V371 | M | 12 |
| C166 | T | 12 | C337 | P | 6 | C822 | K | 9 | L294 | P | 7 | R340 | F | 12 | V381 | T | 12 |
| C167 | T | 12 | C338 | F | 12 | C823 | I | 11 | L300 | M | 8 | R341 | F | 12 | V601 | L | 12 |
| C168 | U | 12 | C339 | Q | 5 | C824 | L | 9 | L301 | M | 9 | R342 | U | 6 | V801 | H | 9 |
| C169 | E | 11 | C340 | E | 12 | C826 | I | 10 | L302 | M | 8 | R343 | Q | 11 | V802 | K | 9 |
| C171 | Q | 11 | C341 | F | 11 | C833 | H | 12 | L330 | V | 7 | R344 | Q | 10 | X | | |
| C190 | N | 9 | C342 | P | 5 | C834 | J | 10 | L331 | V | 7 | R345 | Q | 10 | X130 | H | 9 |
| C191 | N | 8 | C343 | V | 6 | D | | | L332 | W | 7 | R347 | P | 11 | X140 | W | 9 |
| C192 | N | 8 | C344 | V | 6 | D100 | R | 9 | L333 | W | 7 | R348 | V | 6 | X142 | D | 6 |
| C194 | N | 9 | C345 | P | 10 | D140 | G | 11 | L359 | F | 12 | R349 | V | 6 | X380 | I | 6 |
| C196 | P | 8 | C346 | P | 10 | D190 | O | 10 | L360 | F | 12 | R352 | W | 6 | X470 | N | 6 |
| C197 | P | 8 | C347 | W | 7 | D312 | R | 11 | L380 | U | 12 | R353 | W | 6 | X472 | R | 11 |
| C198 | O | 12 | C348 | P | 11 | D314 | U | 9 | L430 | J | 12 | R354 | E | 9 | X600 | D | 9 |
| C199 | M | 7 | C349 | Q | 11 | D315 | U | 10 | L431 | K | 12 | R355 | E | 9 | X601 | D | 8 |
| C201 | P | 9 | C350 | P | 10 | D316 | U | 7 | L603 | J | 7 | R356 | F | 9 | X602 | E | 10 |
| C202 | N | 9 | C351 | P | 11 | D317 | S | 6 | L604 | J | 7 | R357 | E | 9 | X603 | D | 10 |
| C203 | O | 9 | C352 | W | 6 | F | | | L606 | I | 7 | R358 | E | 9 | Z | | |
| C204 | O | 8 | C353 | W | 6 | F380 | V | 12 | L607 | I | 7 | R361 | Q | 10 | Z140 | W | 10 |
| C205 | P | 10 | C354 | E | 8 | G | | | L608 | J | 7 | R362 | Q | 5 | Z141 | F | 7 |
| C206 | P | 8 | C355 | F | 9 | G190 | O | 13 | L609 | I | 7 | R363 | P | 5 | Z142 | V | 10 |
| C207 | P | 10 | C356 | E | 9 | G701 | M | 5 | L705 | K | 7 | R364 | P | 9 | Z601 | I | 9 |
| C209 | P | 11 | C357 | Q | 10 | J | | | L706 | K | 6 | R365 | Q | 9 | Z602 | J | 8 |
| C211 | P | 9 | C359 | P | 5 | J110 | G | 6 | L707 | K | 6 | R366 | Q | 8 | Z603 | I | 8 |
| C213 | P | 9 | C361 | V | 7 | J111 | G | 6 | L708 | K | 7 | R367 | P | 11 | Z604 | I | 8 |
| C215 | O | 12 | C368 | P | 9 | J112 | G | 6 | L711 | L | 7 | R370 | K | 12 | Z701 | K | 6 |
| C216 | N | 12 | C369 | Q | 9 | J113 | Q | 8 | L712 | K | 8 | R371 | K | 12 | | | |
| C217 | P | 8 | C370 | J | 12 | J114 | Q | 8 | L801 | H | 10 | R372 | K | 12 | | | |
| C218 | M | 11 | C372 | J | 12 | J115 | Q | 8 | L802 | K | 9 | R373 | K | 12 | | | |
| C219 | M | 11 | C373 | J | 12 | J123 | N | 12 | L805 | J | 9 | R374 | M | 12 | | | |
| C223 | N | 9 | C385 | S | 12 | J124 | M | 12 | L806 | K | 9 | R376 | O | 13 | | | |
| C224 | N | 9 | C386 | G | 6 | J130 | G | 8 | L808 | H | 11 | R383 | G | 6 | | | |
| C226 | P | 11 | C430 | P | 12 | J150 | G | 12 | L811 | K | 10 | R384 | F | 6 | | | |
| C227 | P | 11 | C431 | K | 12 | J170 | M | 12 | N | | | R385 | G | 6 | | | |
| C228 | P | 11 | C432 | I | 10 | J201 | O | 11 | N140 | T | 12 | R404 | J | 5 | | | |
| C230 | M | 11 | C433 | O | 10 | J202 | O | 11 | N261 | P | 7 | R430 | K | 8 | | | |
| C232 | M | 11 | C471 | N | 6 | J203 | O | 12 | N262 | P | 12 | R472 | R | 12 | | | |
| C234 | M | 10 | C485 | S | 12 | J204 | O | 12 | N263 | F | 8 | R489 | N | 7 | | | |
| C235 | O | 12 | C489 | P | 12 | J205 | O | 12 | N264 | F | 8 | R490 | N | 7 | | | |
| C239 | M | 9 | C490 | O | 13 | J206 | N | 12 | N330 | P | 5 | R496 | O | 6 | | | |
| C240 | M | 10 | C491 | Q | 13 | J207 | N/O | 12 | N380 | G | 6 | R601 | L | 12 | | | |
| C241 | O | 8 | C602 | L | 12 | J208 | N/O | 11 | N430 | M | 10 | R602 | L | 13 | | | |
| C242 | O | 9 | C603 | L | 12 | J209 | O | 11 | N470 | P | 13 | R603 | L | 13 | | | |
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| C244 | M | 8 | C605 | H | 7 | J211 | N | 12 | N801 | J | 11 | R606 | H | 7 | | | |
| C245 | O | 12 | C606 | H | 6 | J212 | N | 12 | R | | | R610 | H | 7 | | | |
| C246 | M | 8 | C607 | H | 7 | J213 | N | 11 | R118 | S | 8 | R612 | H | 6 | | | |
| C247 | O | 8 | C608 | J | 7 | J214 | N | 11 | R130 | Q | 8 | R620 | I | 5 | | | |
| C248 | Q | 11 | C610 | M | 6 | J215 | N | 11 | R131 | Q | 8 | R623 | J | 5 | | | |
| C249 | P | 10 | C611 | I | 5 | J260 | F | 8 | R132 | D | 11 | R626 | H | 5 | | | |
| C251 | M | 11 | C612 | I | 5 | J261 | O | 7 | R133 | D | 11 | R627 | L | 13 | | | |
| C252 | P | 11 | C615 | H | 7 | J310 | T | 10 | R134 | F | 8 | R630 | I | 5 | | | |
| C254 | Q | 9 | C620 | I | 7 | J311 | S | 9 | R135 | F | 7 | R701 | I | 5 | | | |
| C255 | M | 10 | C622 | K | 6 | J312 | T | 5 | R136 | S | 8 | R702 | I | 5 | | | |
| C256 | M | 10 | C623 | J | 5 | J313 | S | 5 | R137 | S | 8 | R703 | I | 5 | | | |
| C257 | M | 10 | C624 | J | 5 | J314 | Q | 11 | R138 | R | 8 | R706 | K | 5 | | | |
| C258 | N | 8 | C625 | J | 4 | J315 | S | 9 | R139 | R | 7 | R707 | K | 5 | | | |
| C259 | M | 9 | C626 | K | 6 | J317 | Q | 11 | R140 | F | 6 | R708 | K | 5 | | | |
| C260 | Q | 6 | C627 | K | 7 | J318 | Q | 12 | R141 | F | 6 | R710 | L | 5 | | | |
| C261 | Q | 7 | C629 | J | 5 | J319 | R | 10 | R142 | T | 11 | R711 | L | 4 | | | |
| C263 | Q | 7 | C634 | I | 7 | J320 | S | 11 | R143 | E | 7 | R715 | L | 5 | | | |
| C270 | F | 8 | C640 | J | 9 | J330 | Q | 5 | R144 | E | 7 | R716 | L | 5 | | | |
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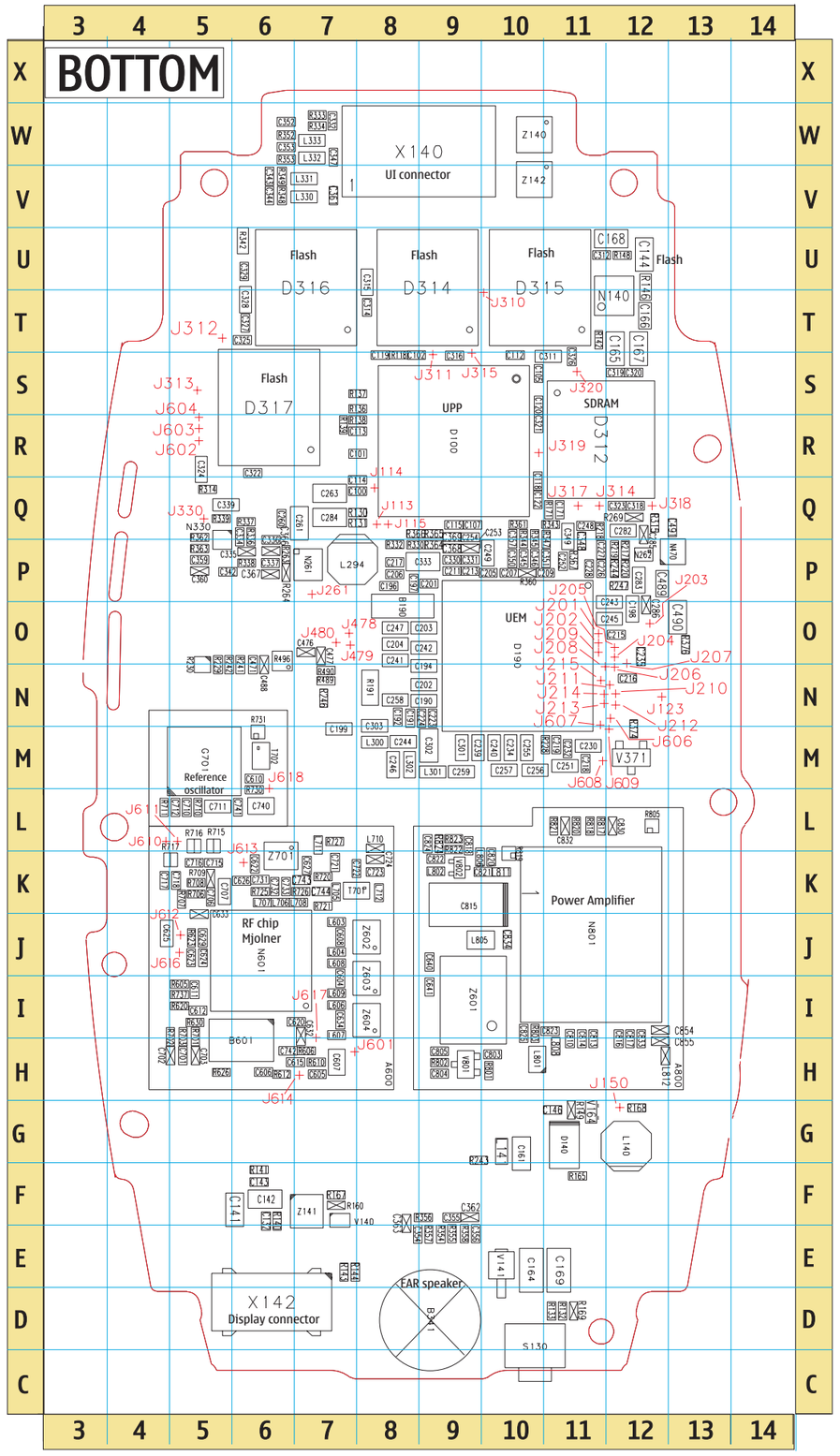



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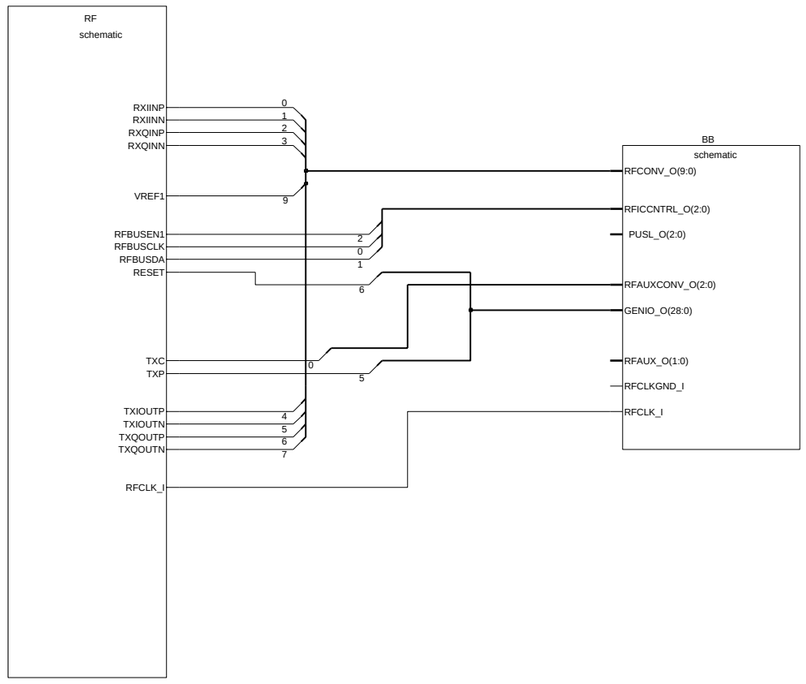
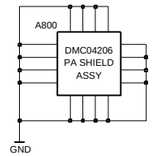
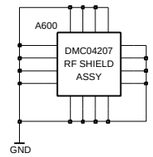
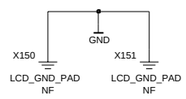
## Schematics (NH4_055)

### RF-BB Connections





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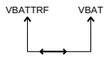


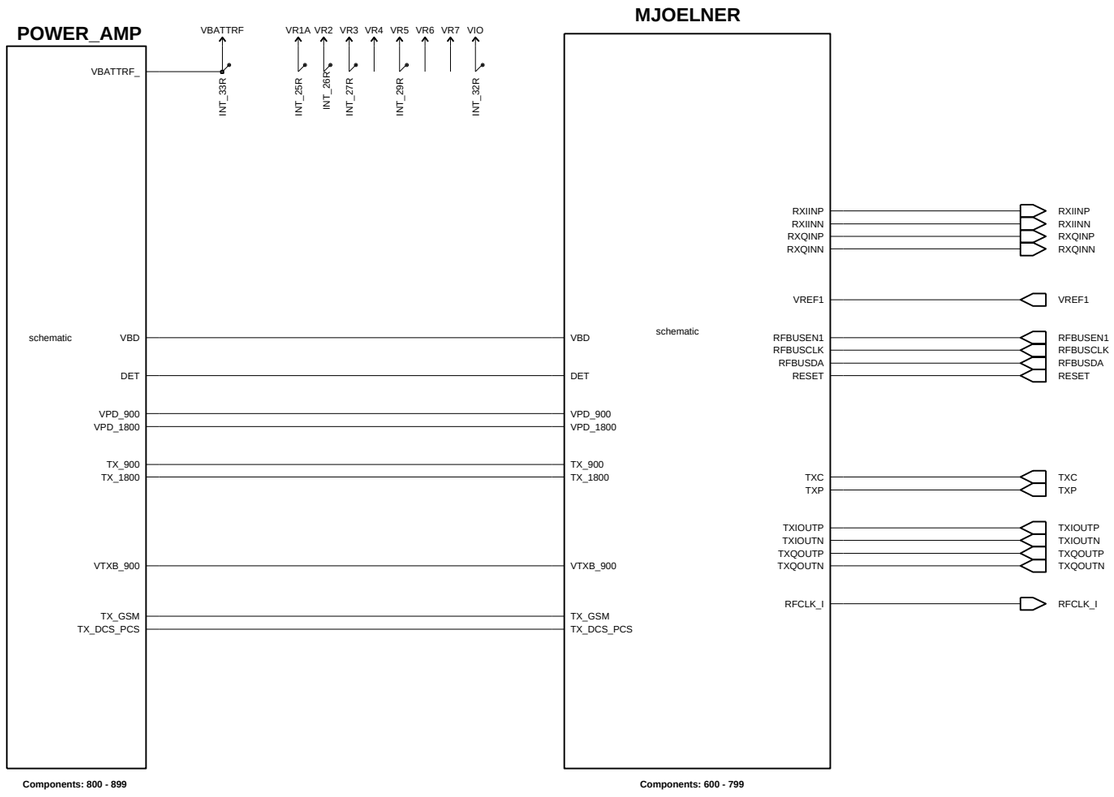



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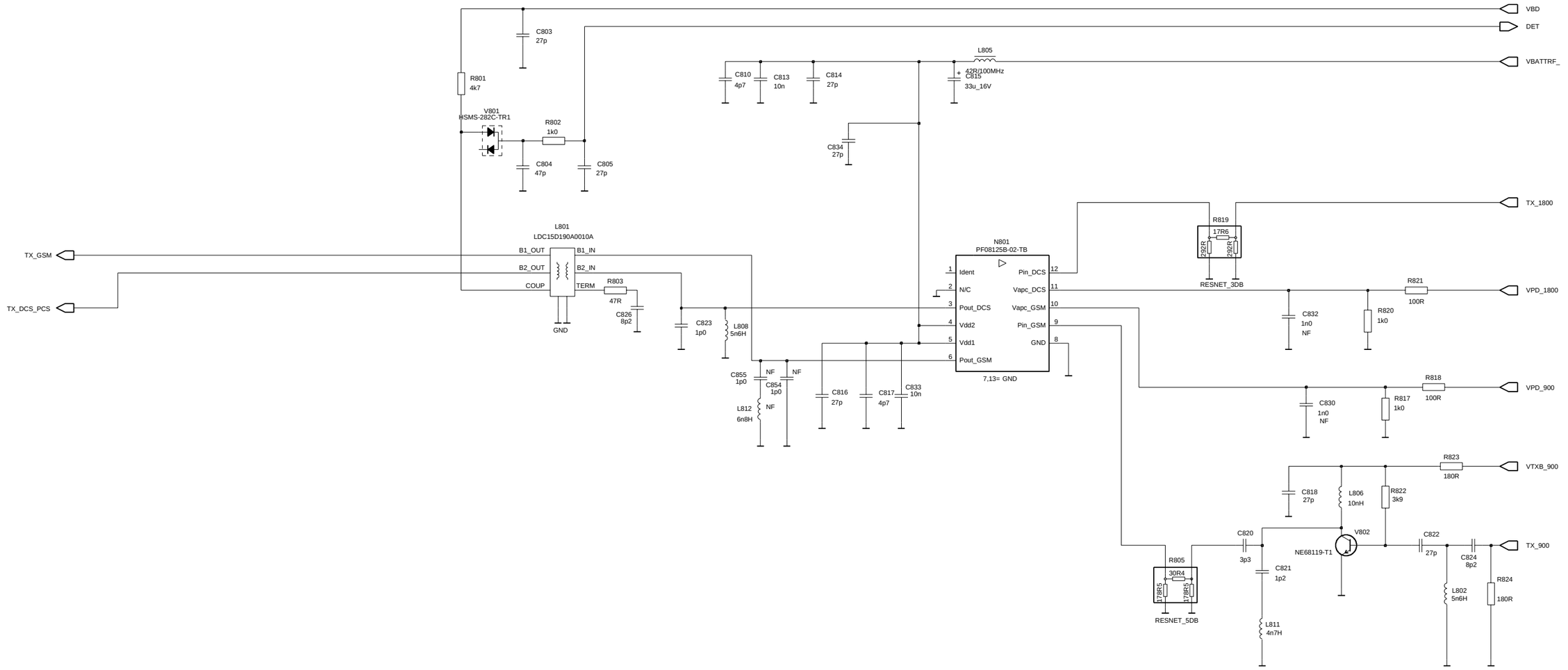
## Power Amp





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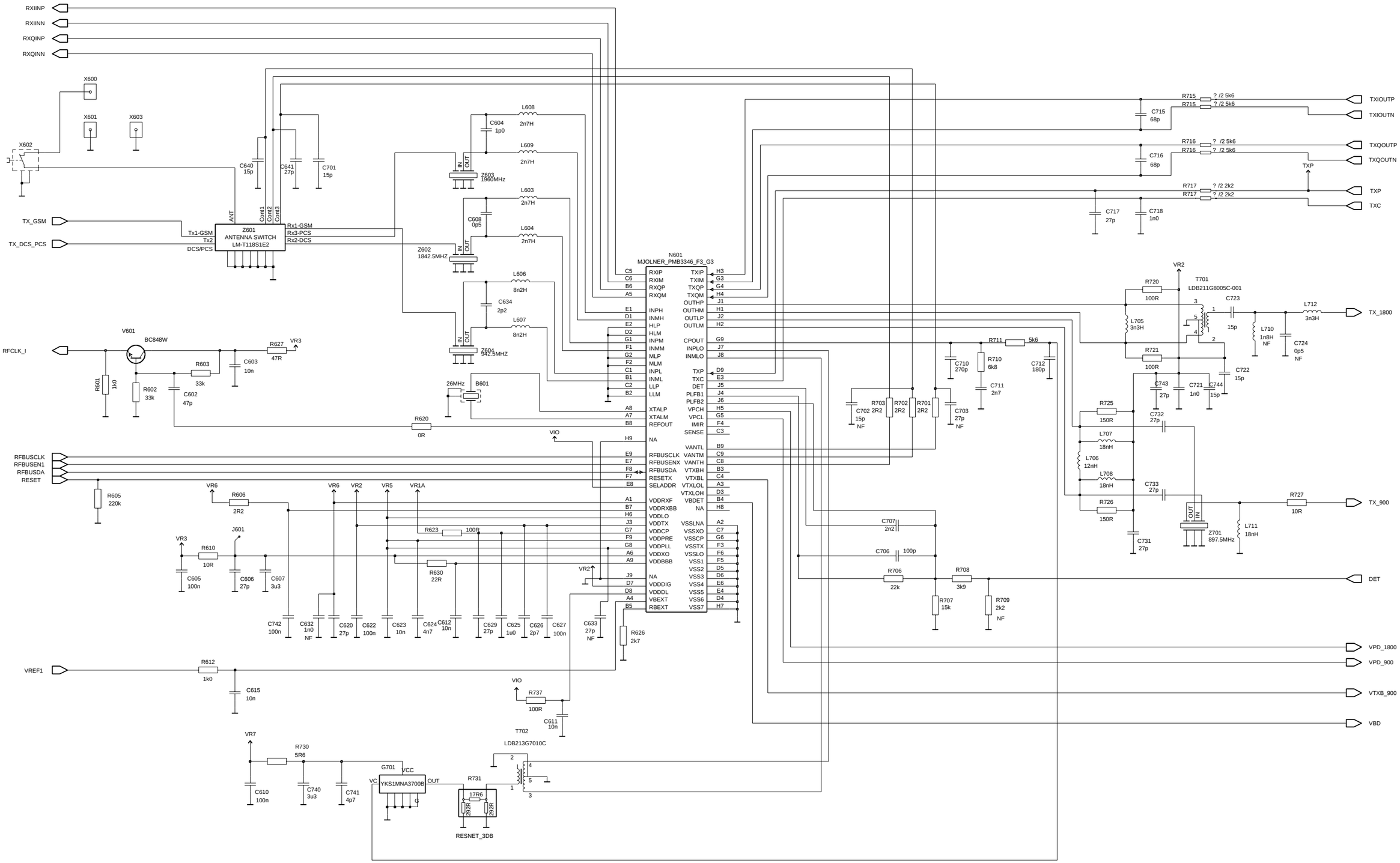
## Mjoelner





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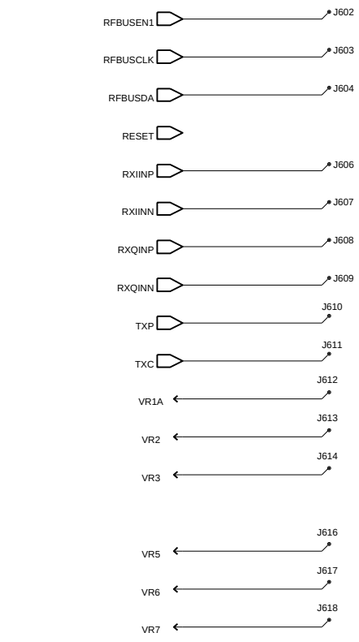
## Testpoints

Testpoints for proto testing





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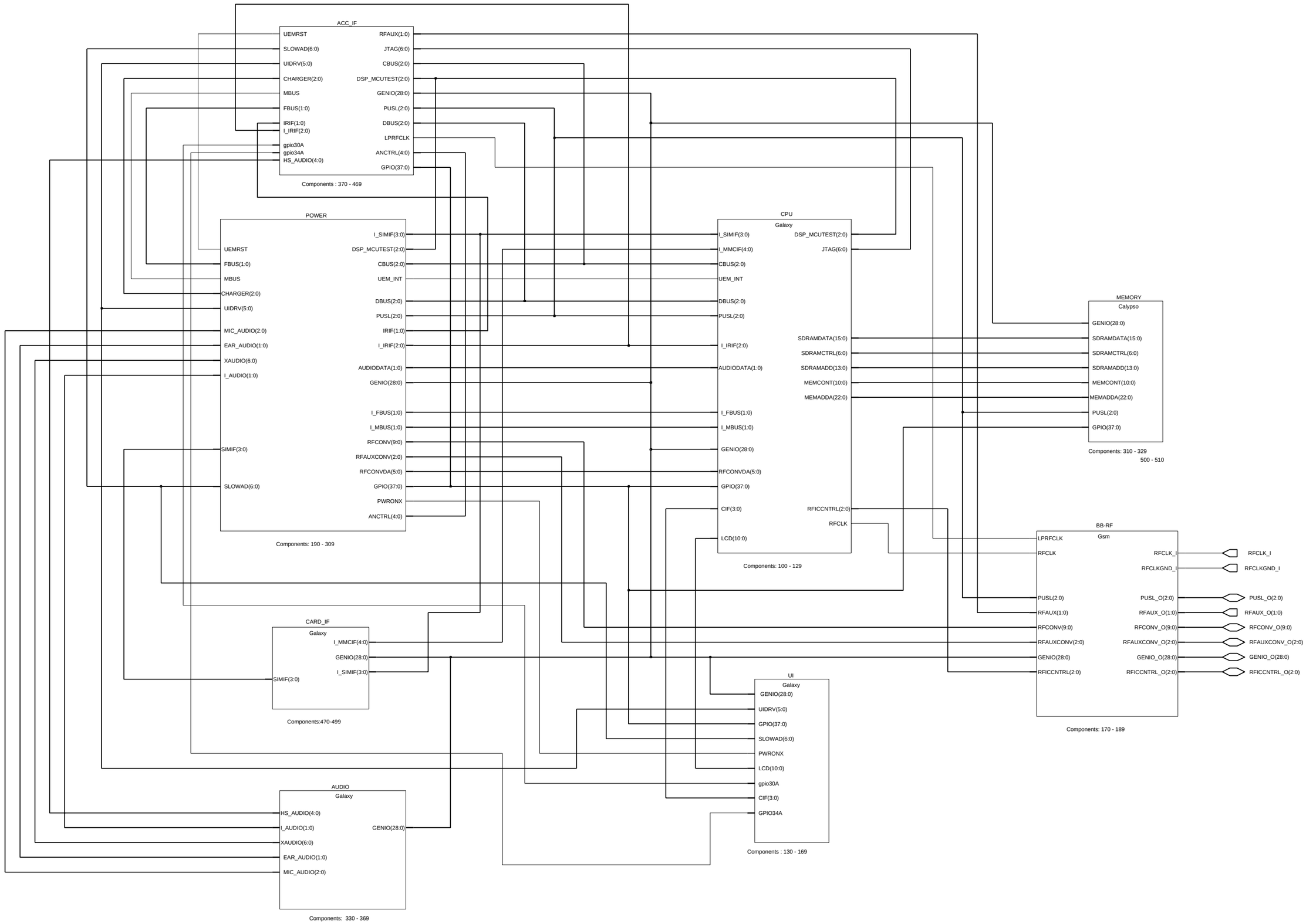
## BB





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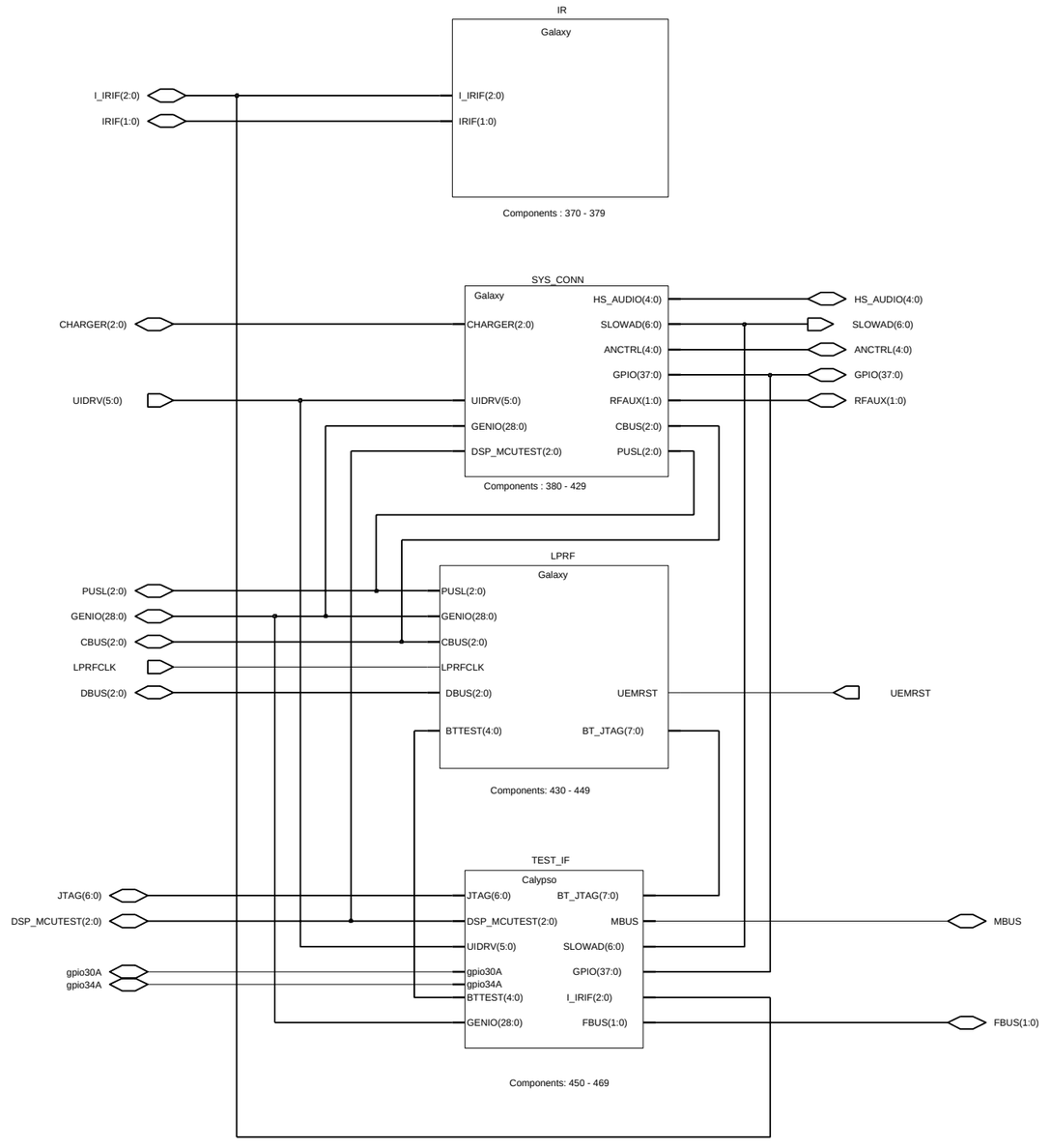
## Accessory Interface





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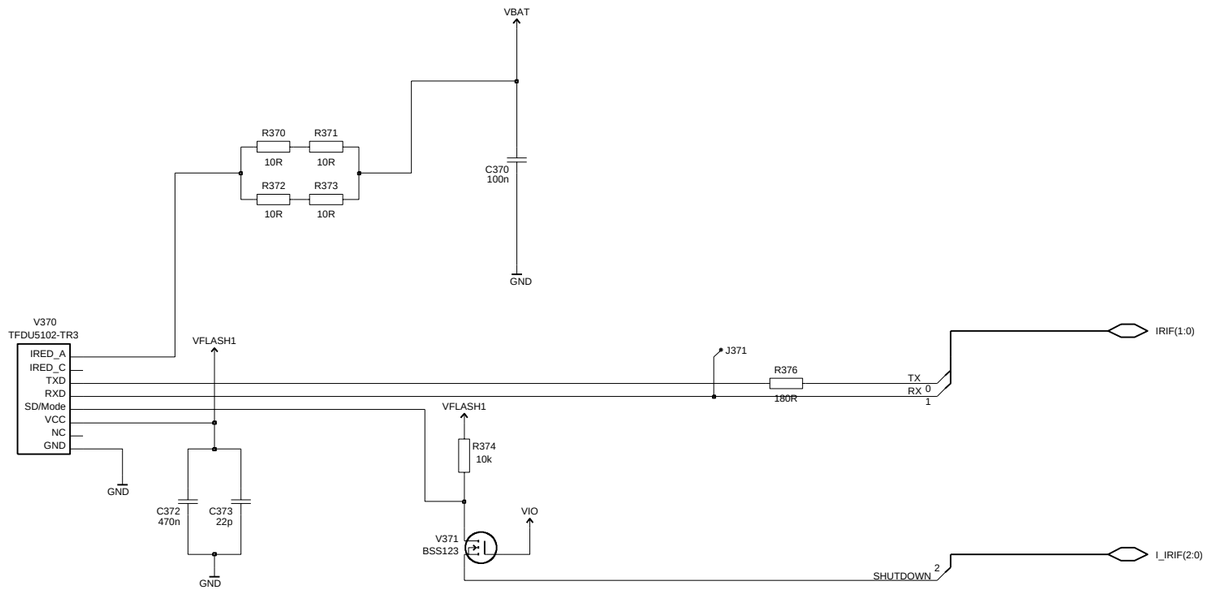
## IR Module





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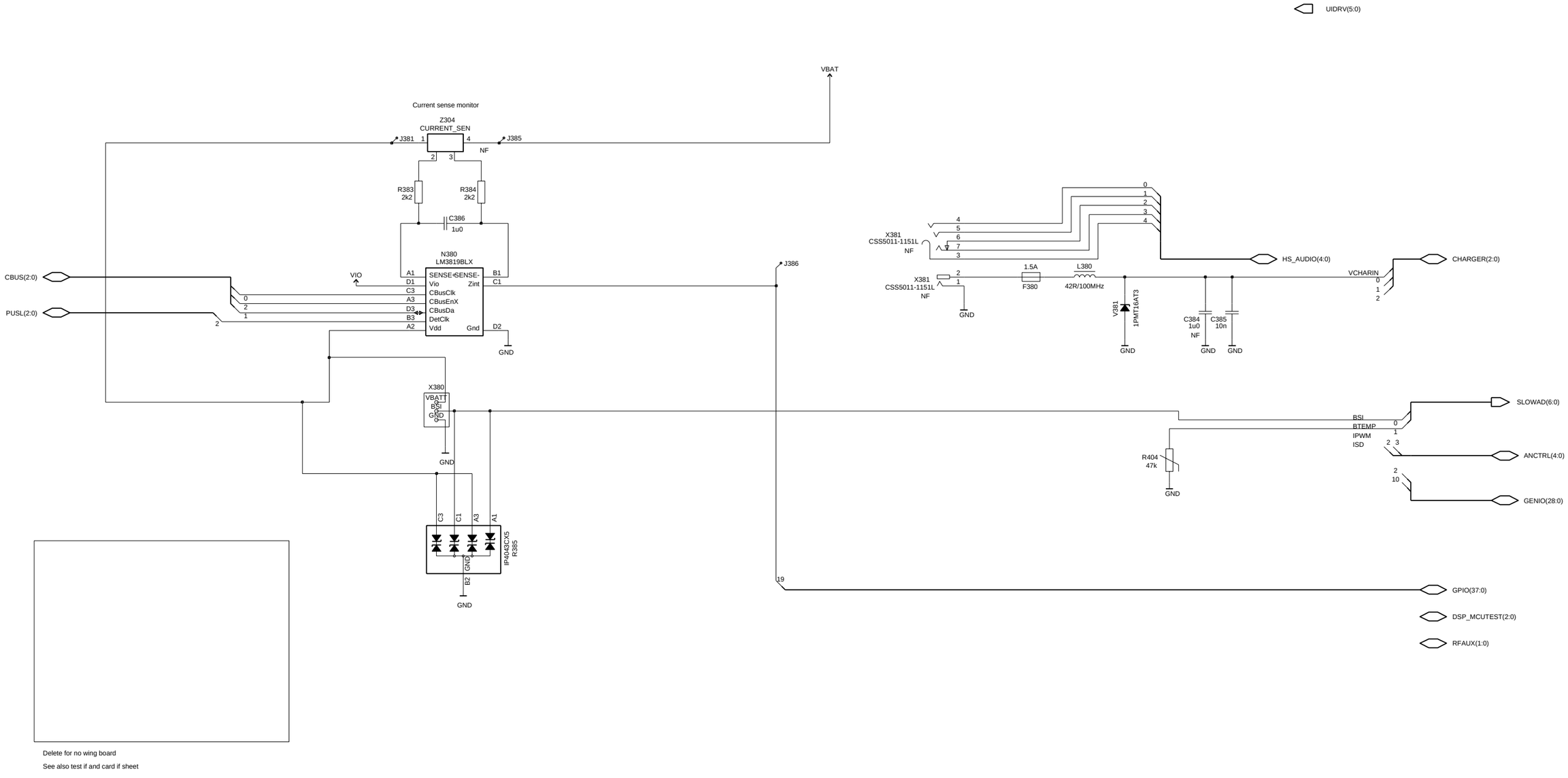
## System Connector





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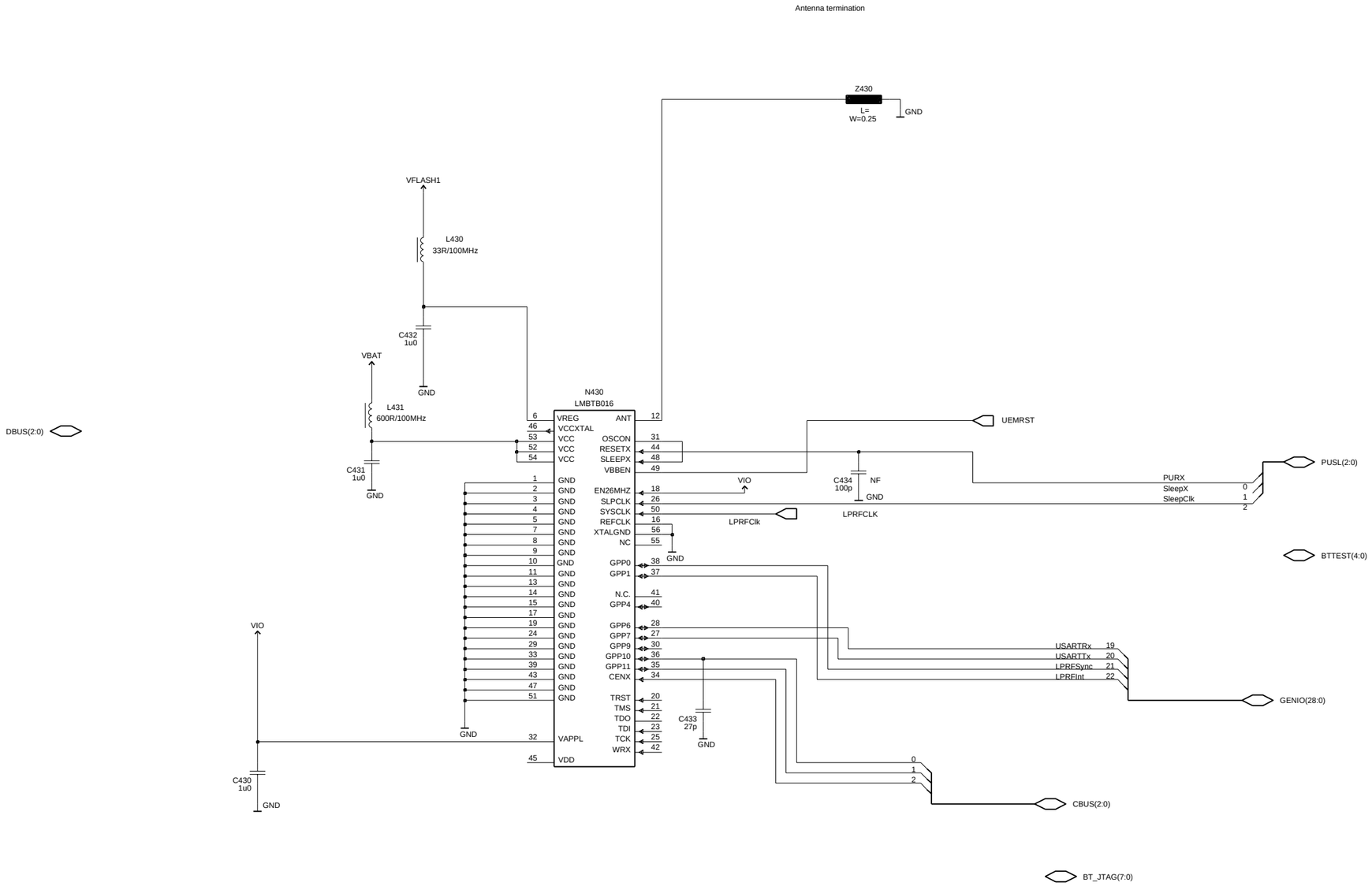
## LPRF BT102





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# Test Interface

All of them should be placed on WING.

I_IRIF(2:0)

BTTEST(4:0)

SLOWAD(6:0)

FBUS(1:0)

MBUS

UIDRV(5:0)

GENIO(28:0)

BT_JTAG(7:0)

JTAG(6:0)

GPIO(37:0)

SLOWAD(6:0)

GPIO(37:0)

gpio30A

gpio34A

DSP_MCUTEST(2:0)

Delete for no wing board

See also sys conn and card if sheets


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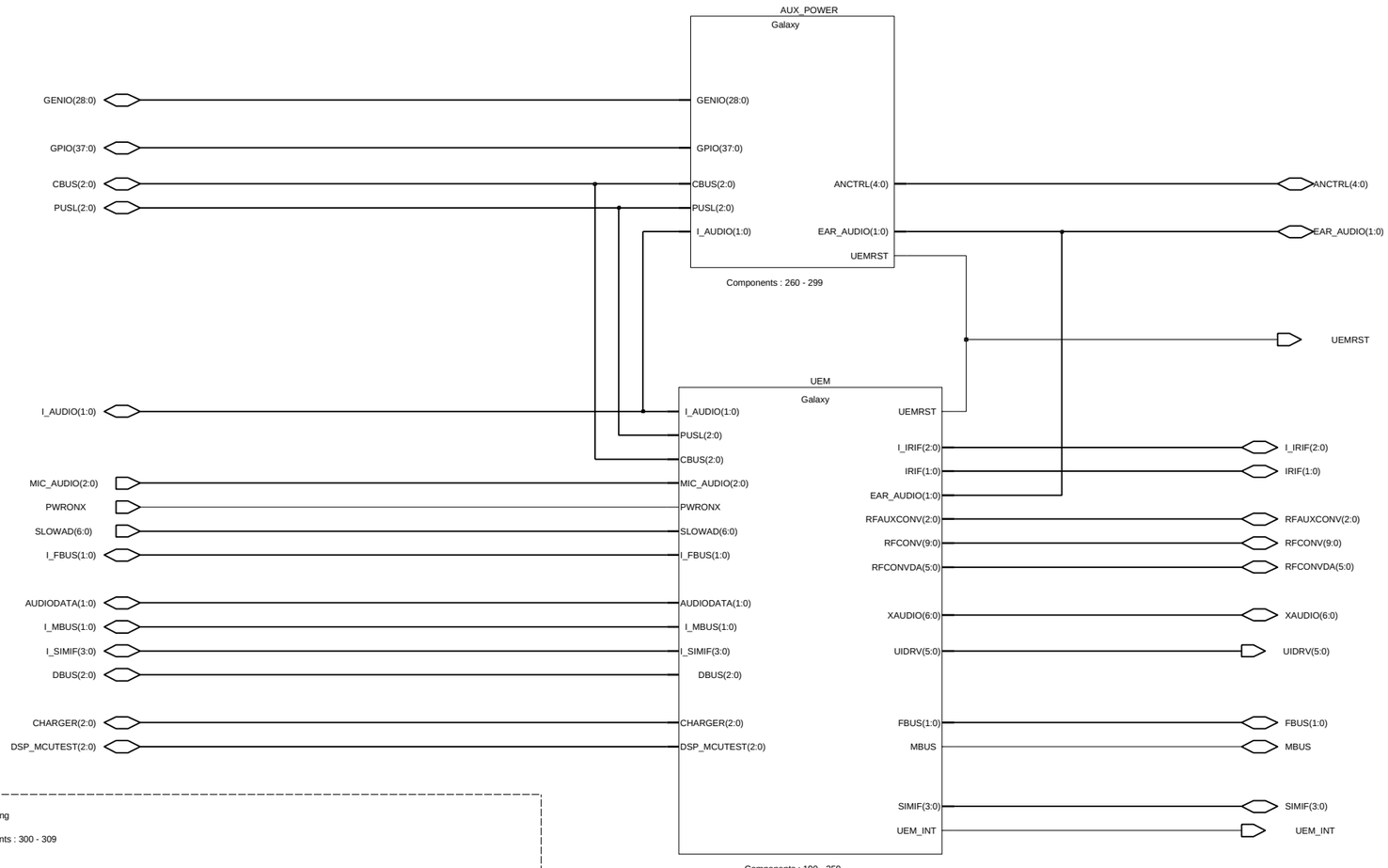
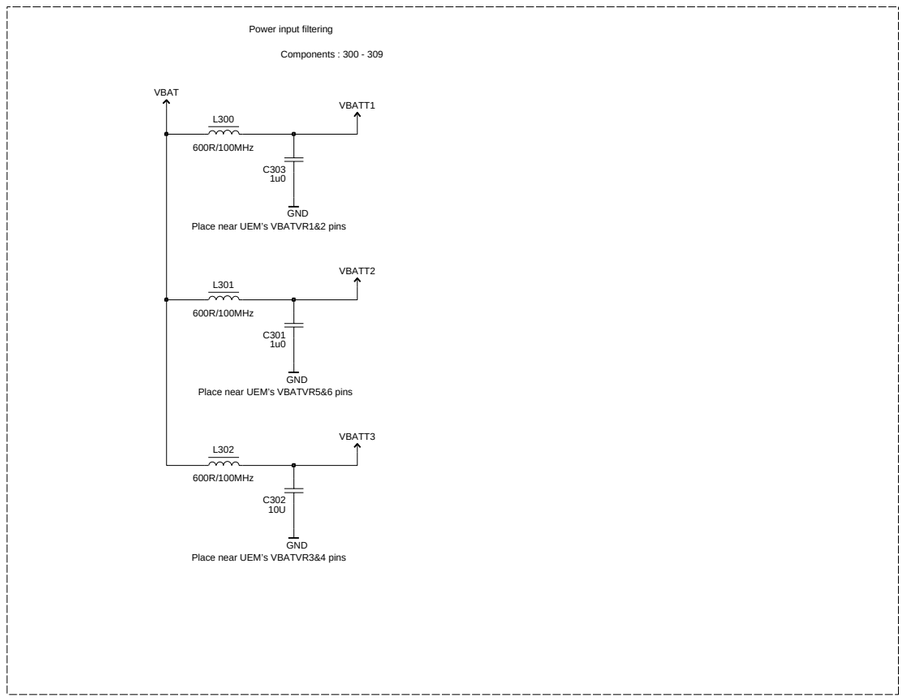
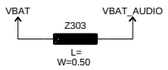
## Power





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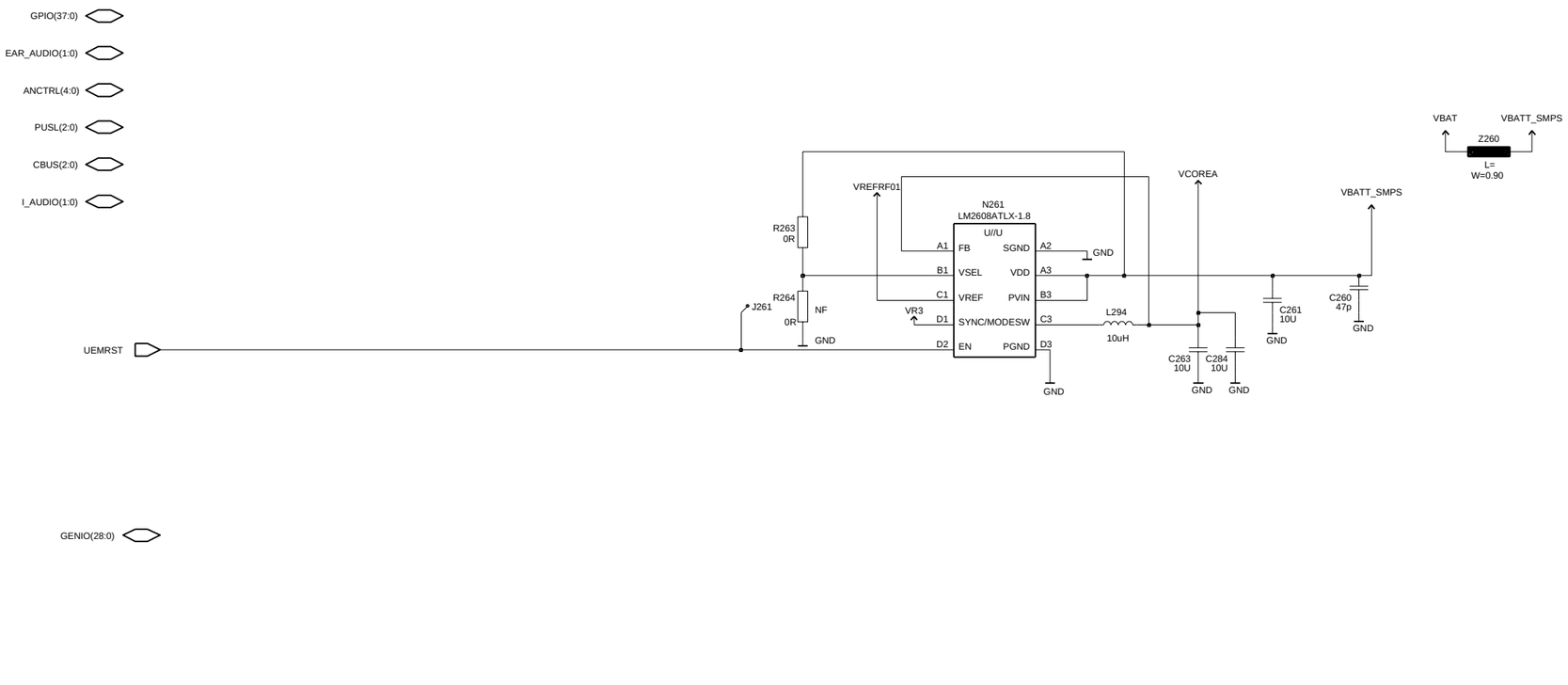
## Aux_Power





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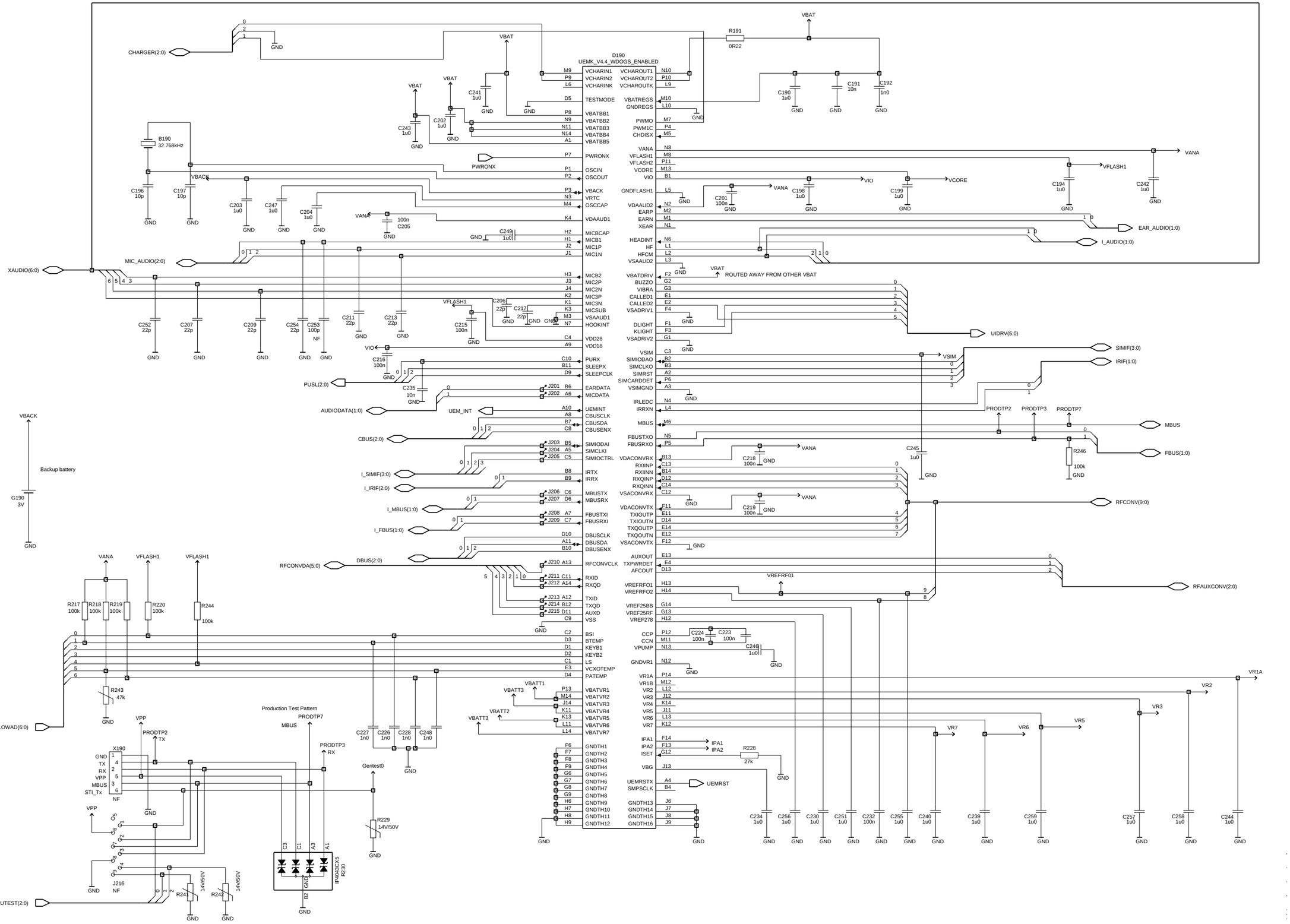
## UEM





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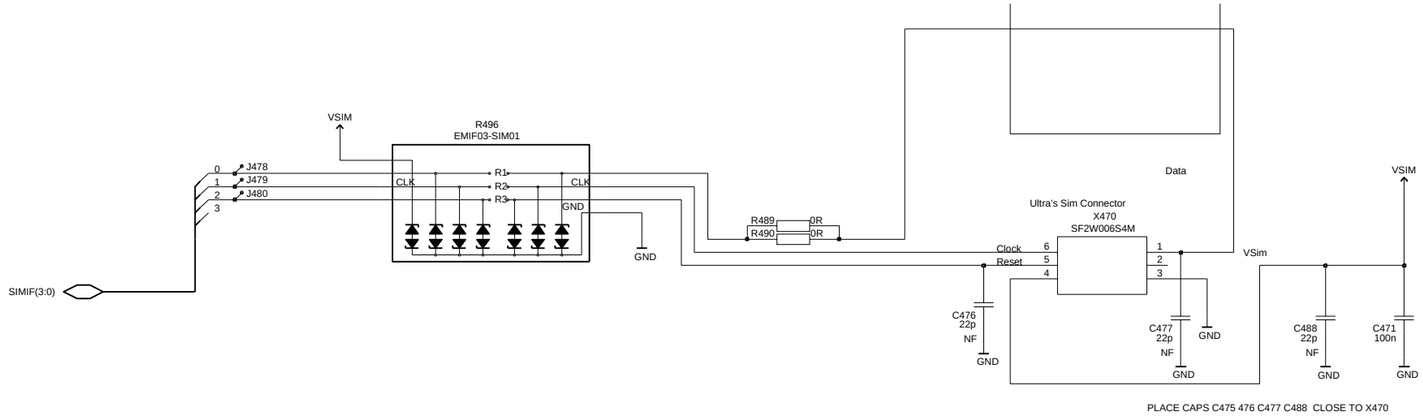
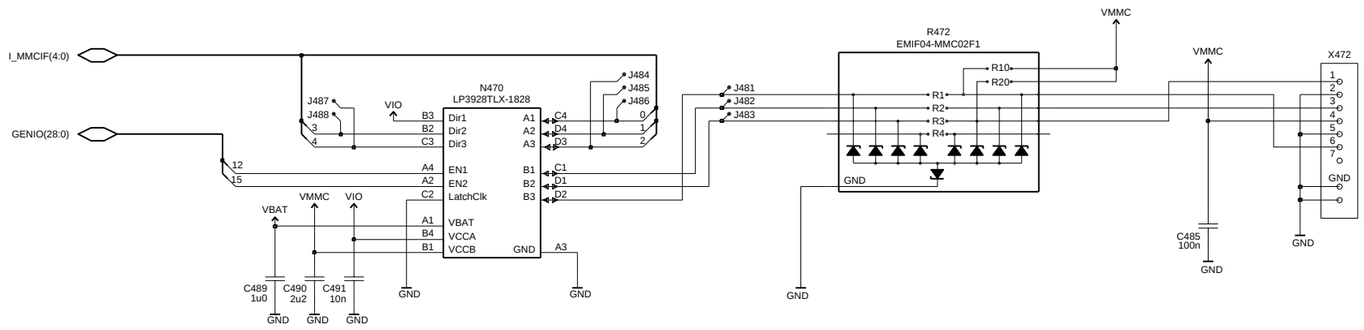
## Card Interface







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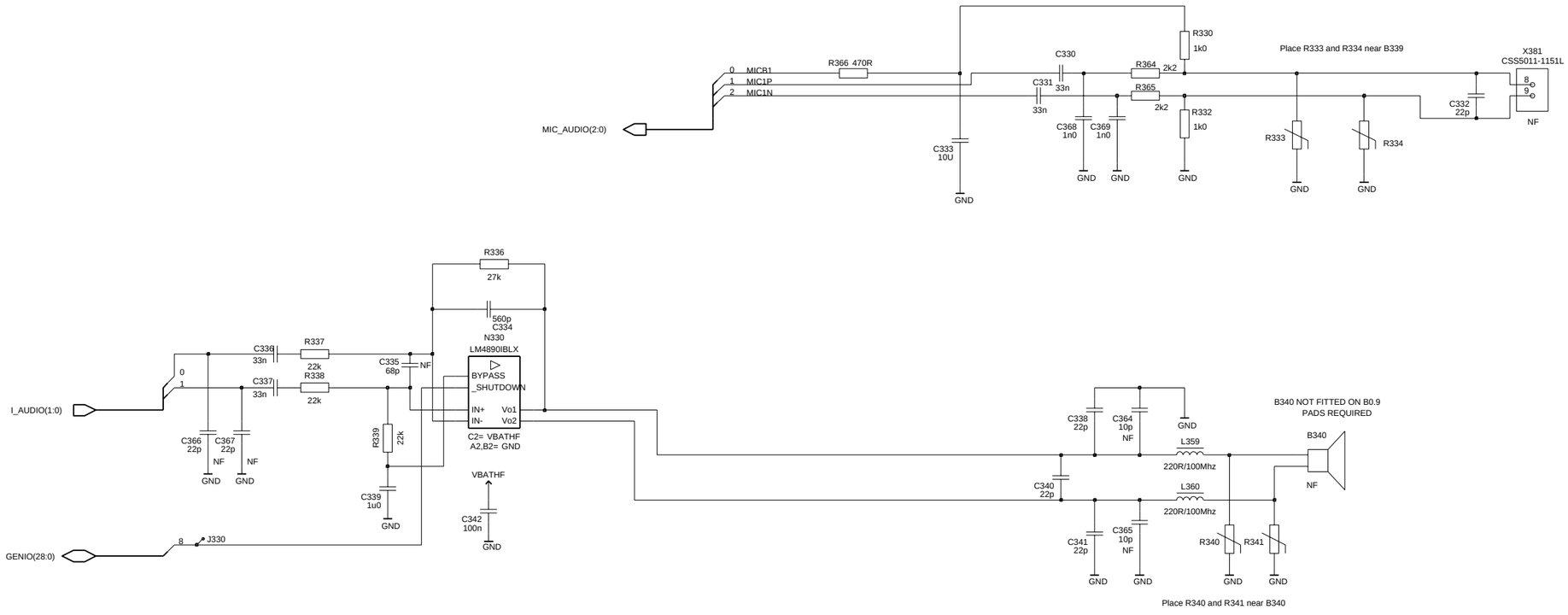
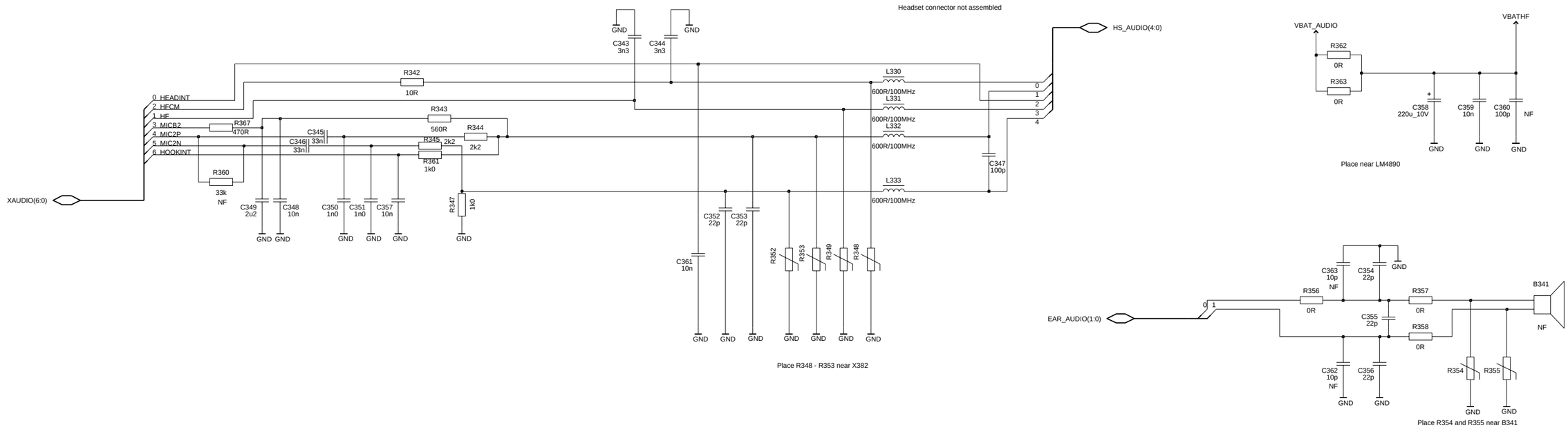
## Audio





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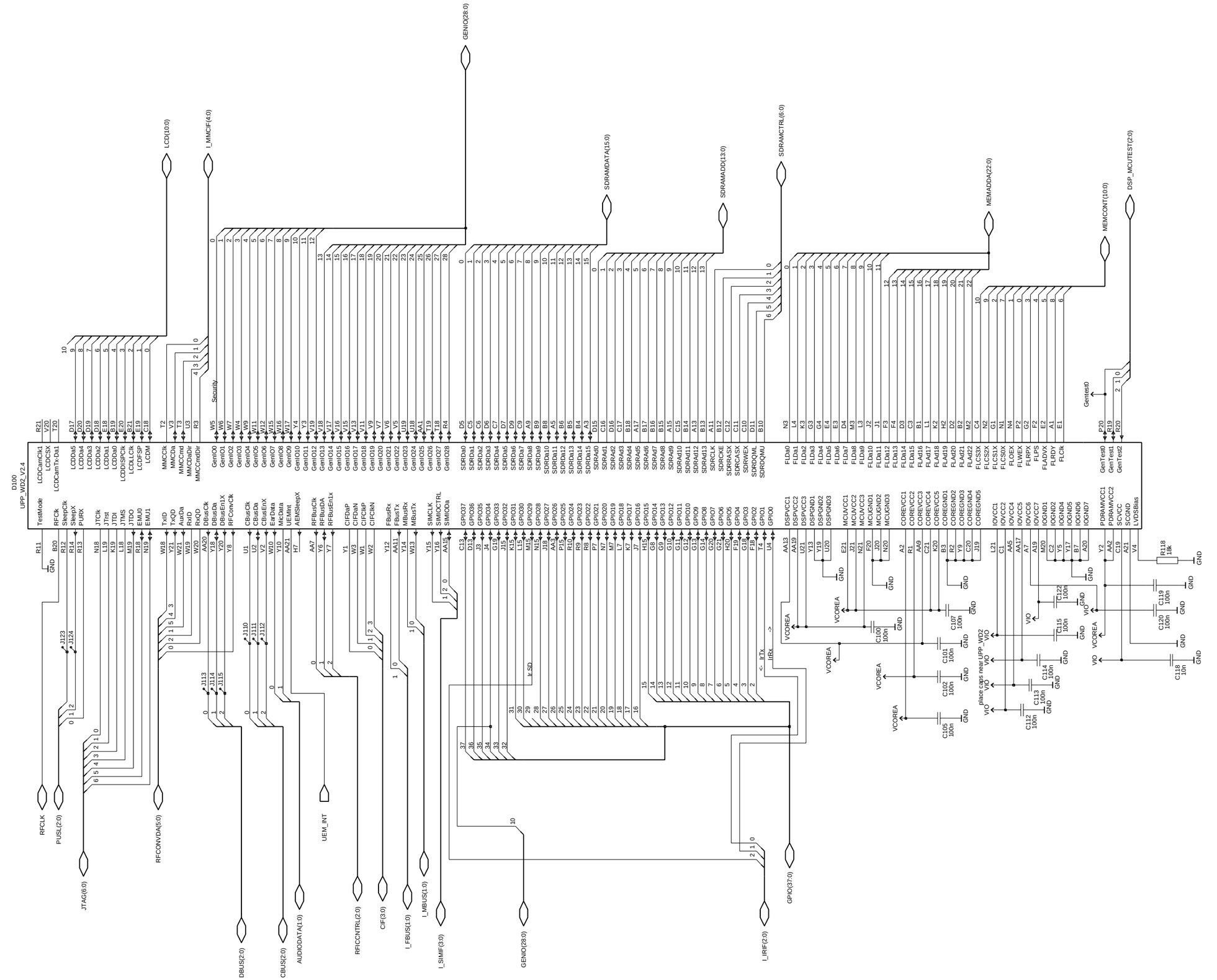
## UPP_WD2





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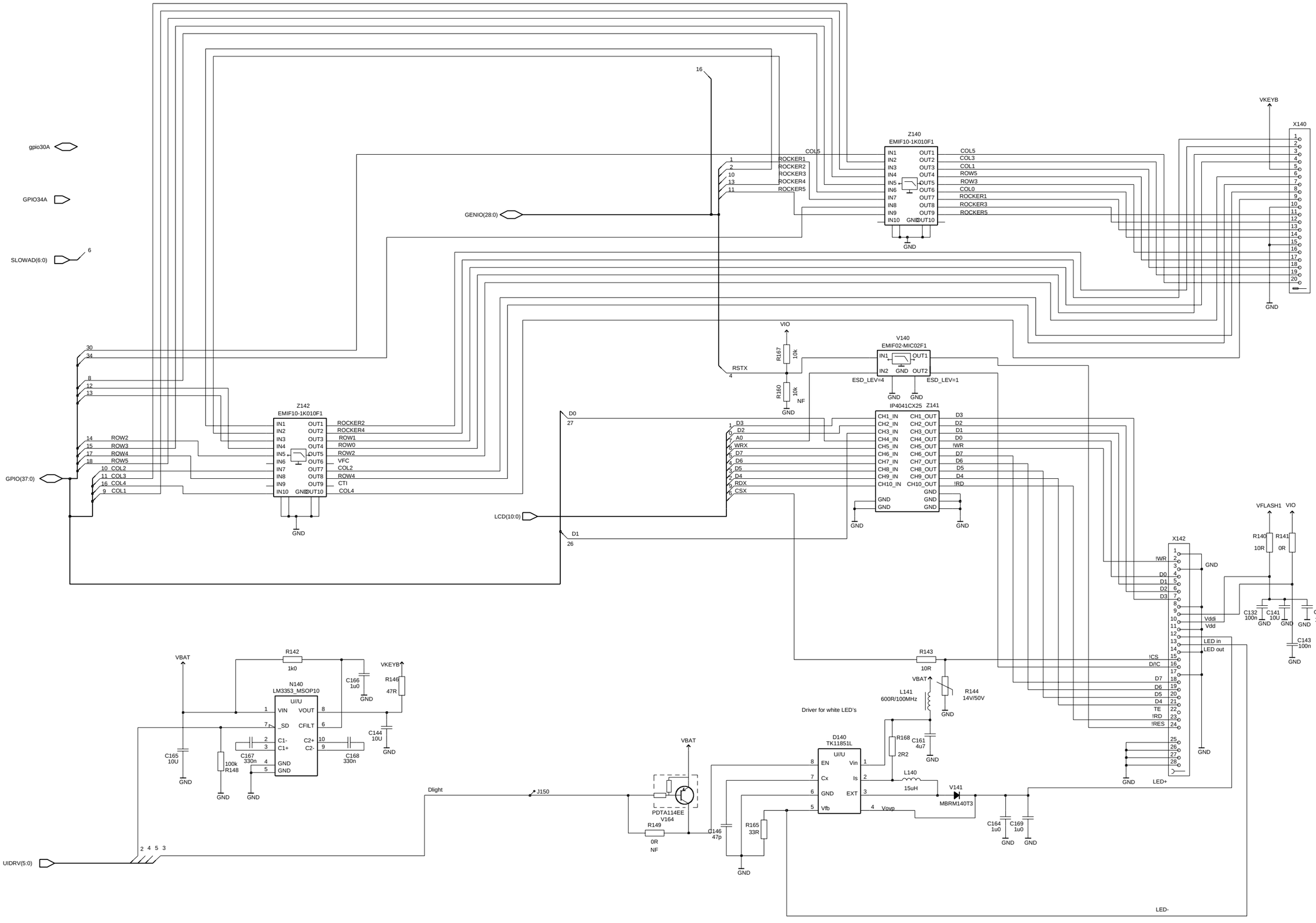
## User Interface





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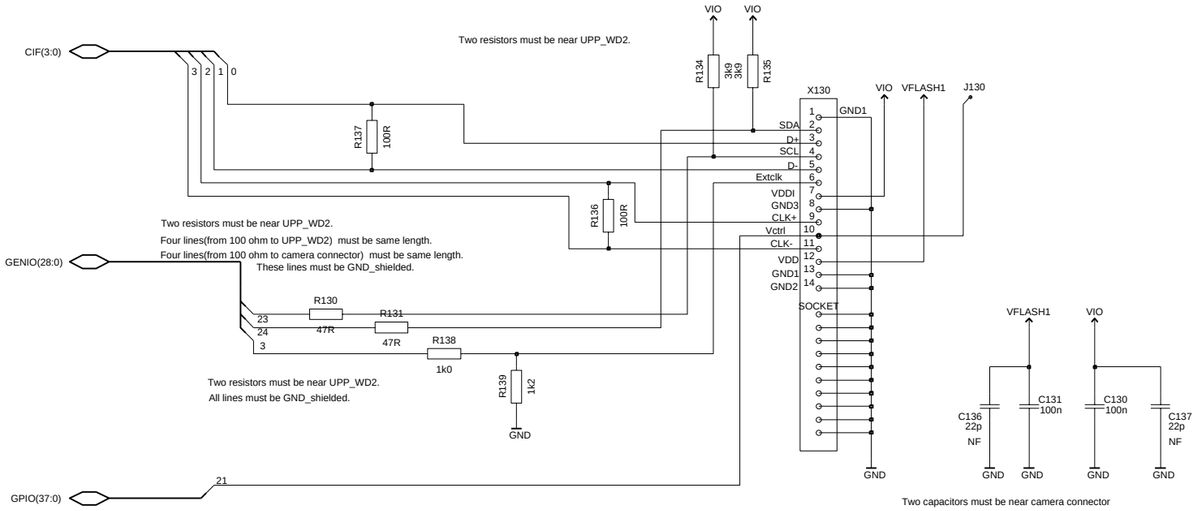
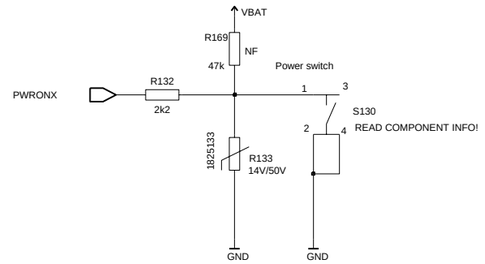
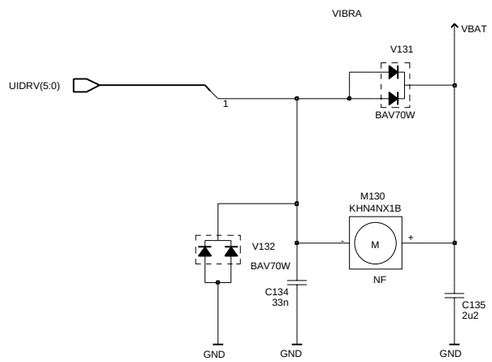



SLOWAD(6:0)





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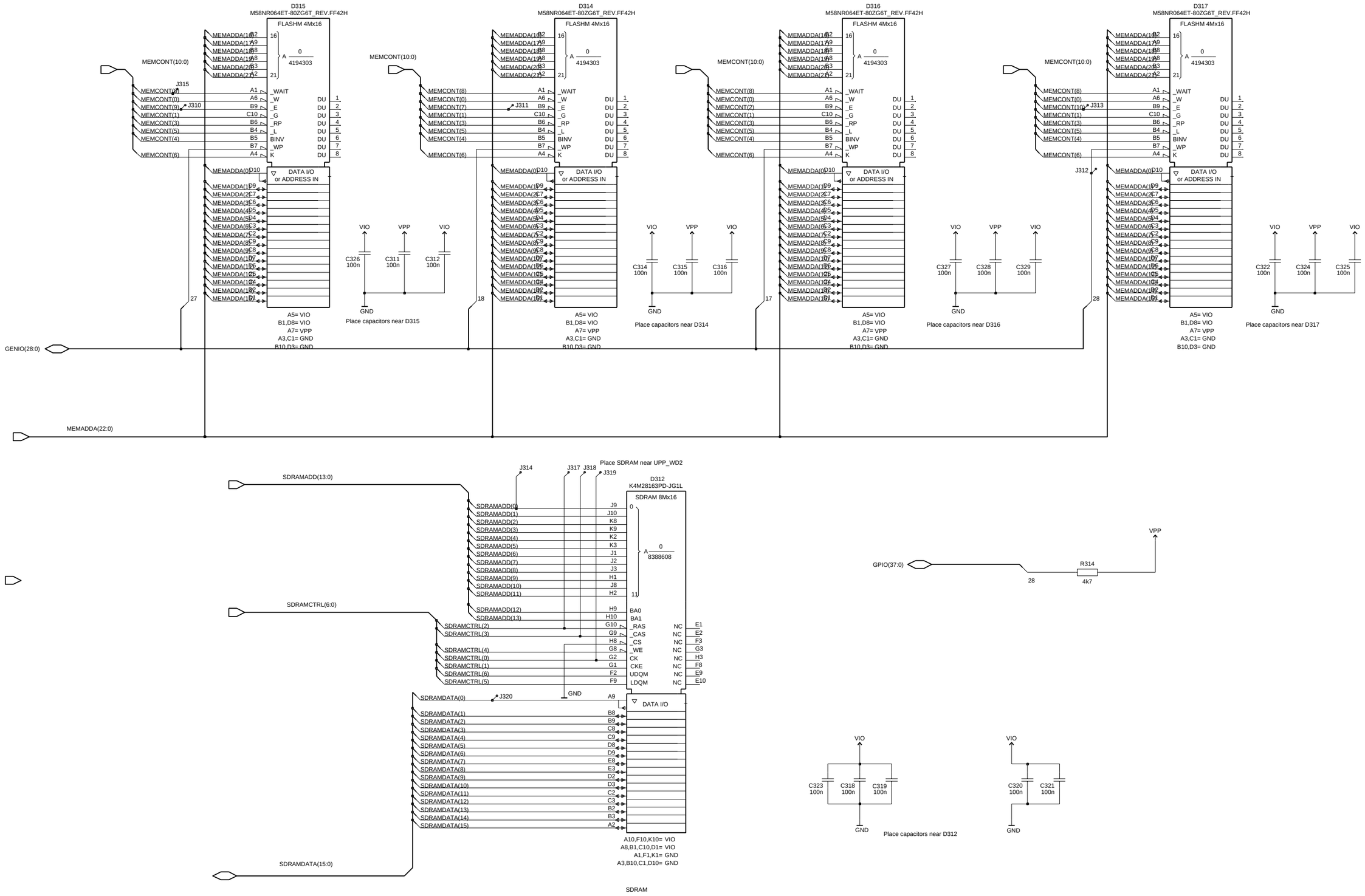
## Memories





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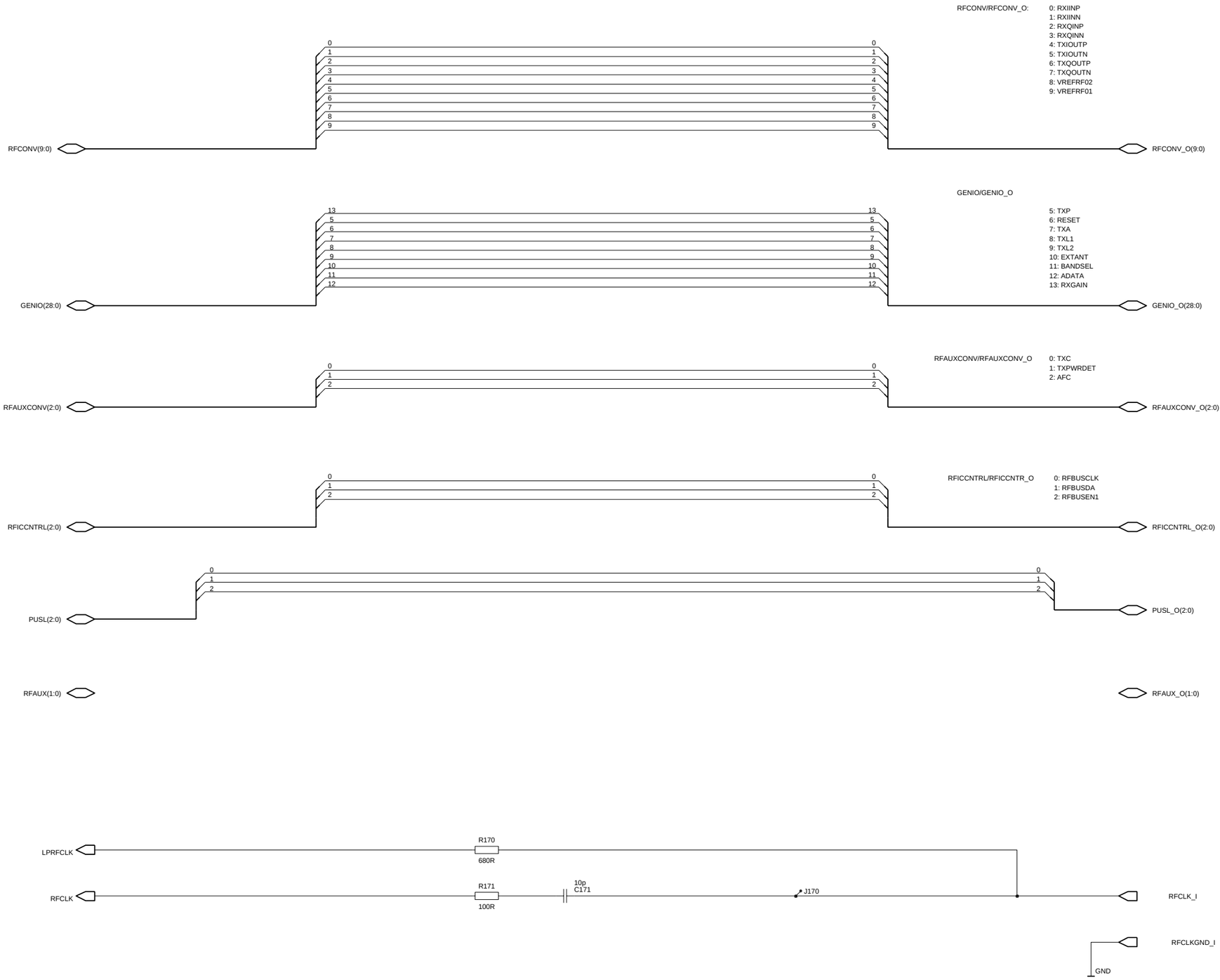
## GSM BB-RF Interface





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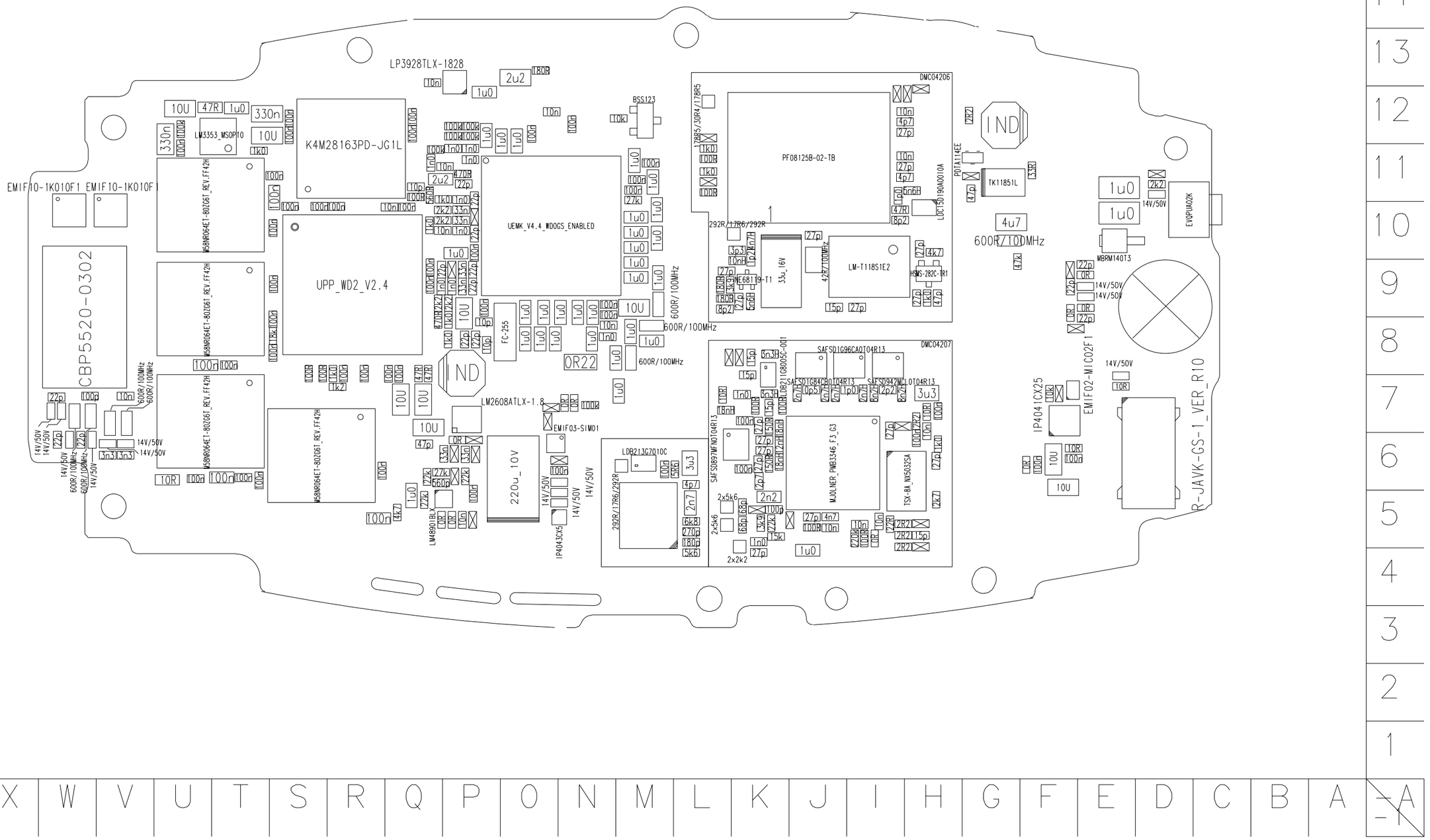
**Layout diagram Bottom**





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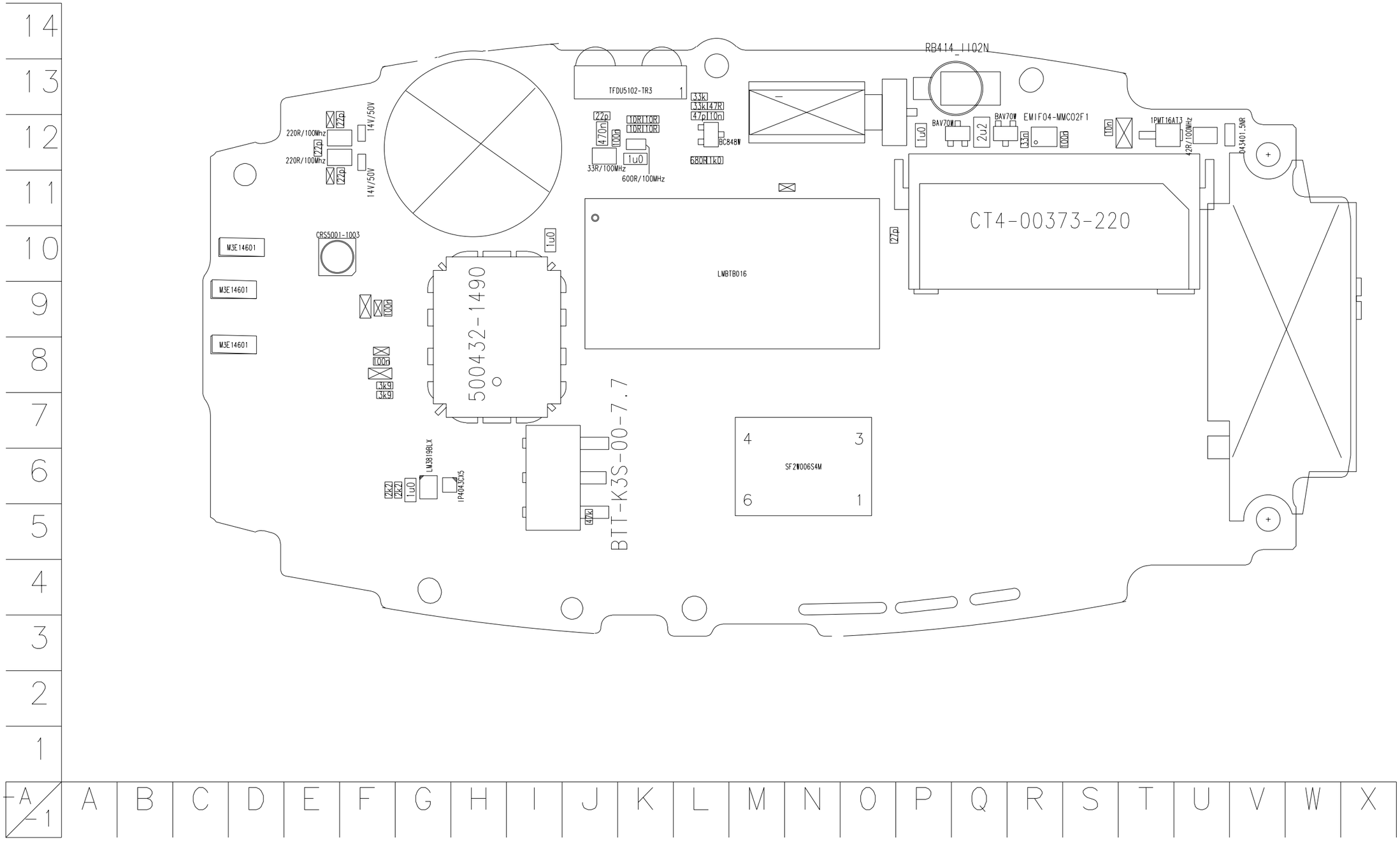
**Layout diagram Top**





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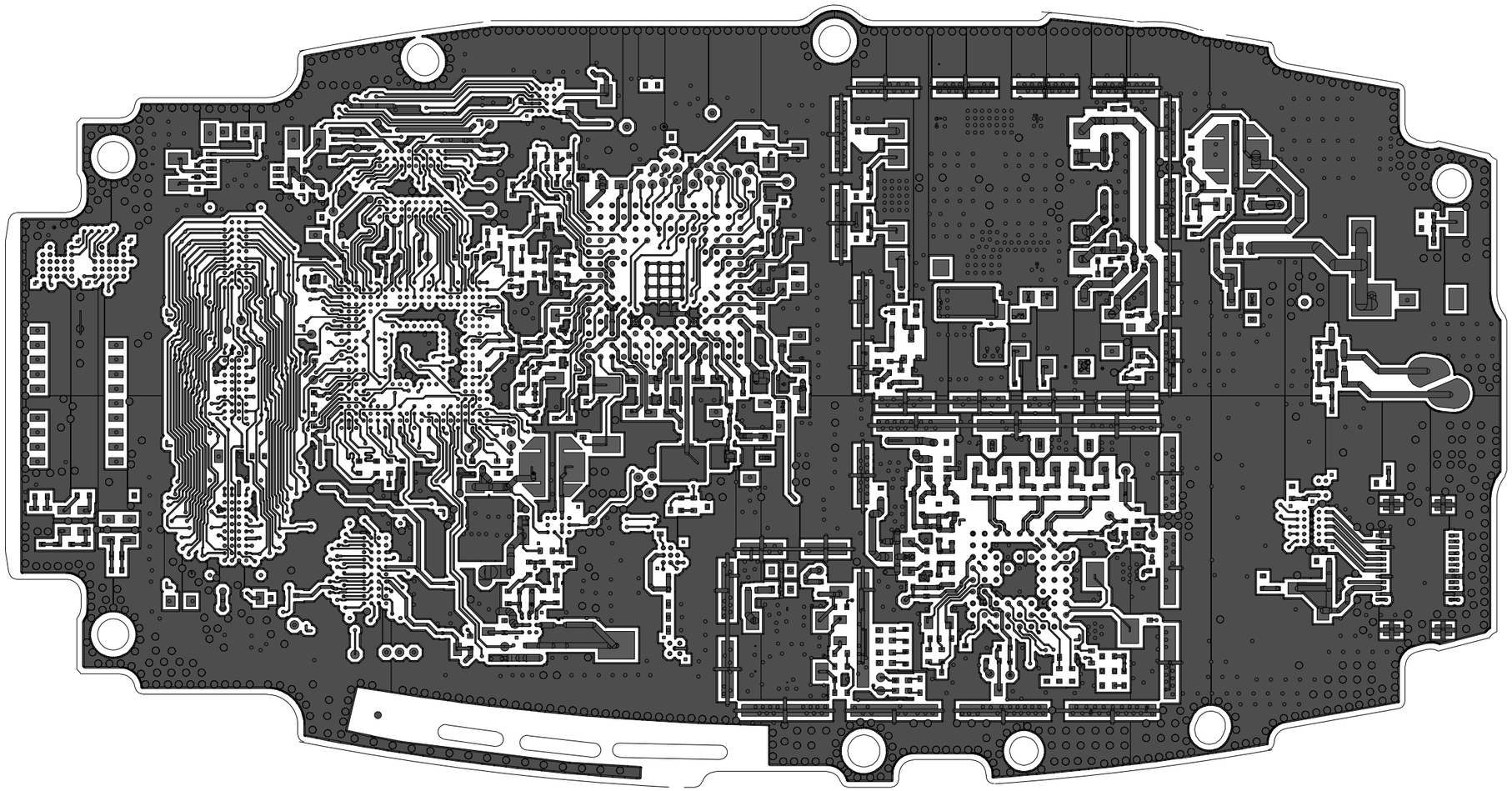
**Board layout diagram Bottom**

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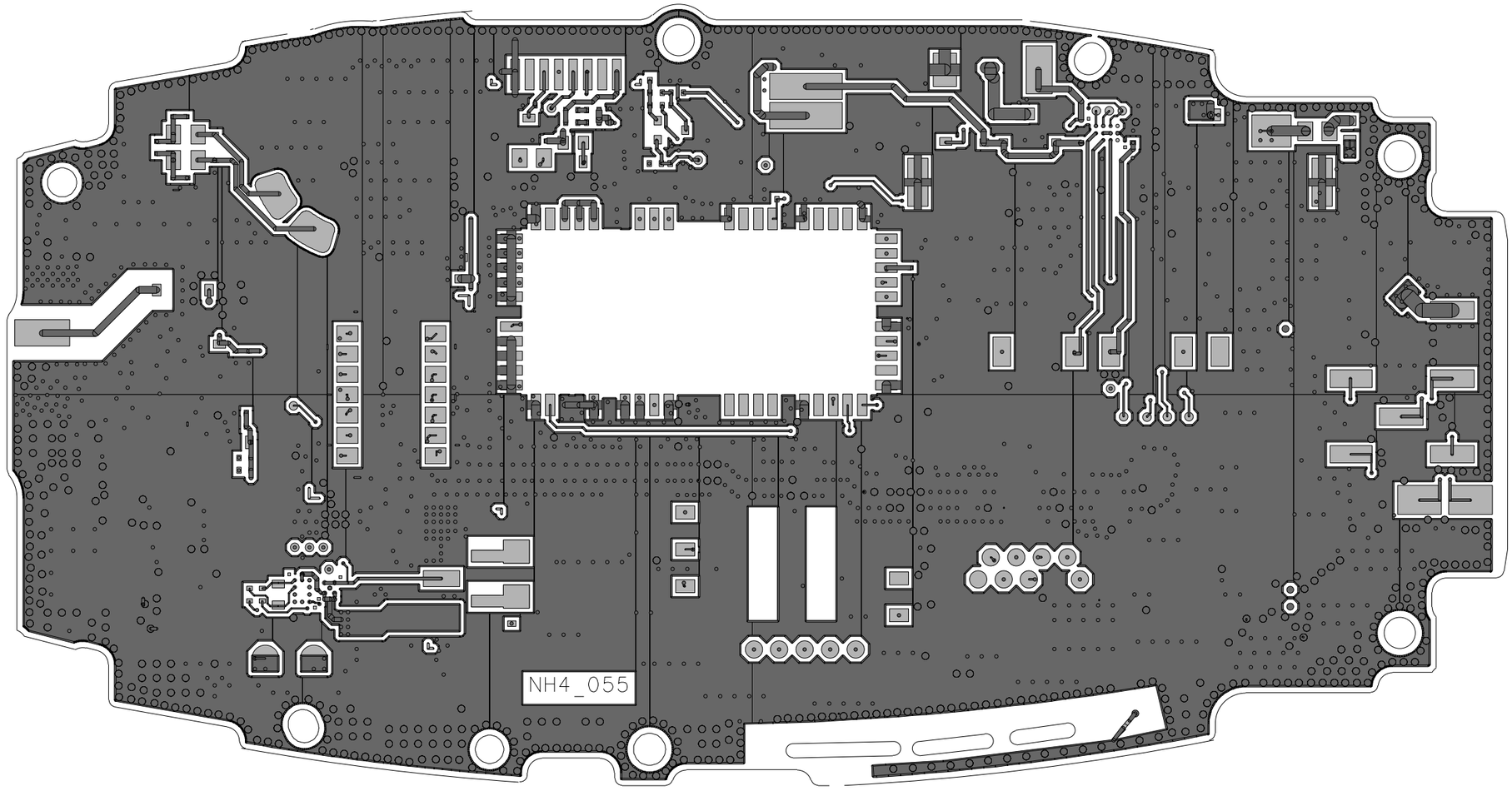
**Board layout diagram Top**





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